American Druggist

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NOTES ON PRACTICAL PHARMACY.*

[Continued from page 192.]

PILLS.

We shall describe further on the processes for gilding, silvering, and varnishing pills.

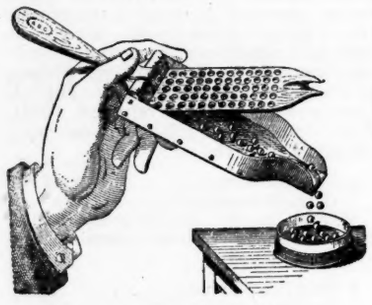
Pill Sieves.—For the purpose of removing any excess of conspergent powder from pills, they are poured into sieves, which are of the form and shape of little colanders, about 2½ inches in diameter.

The handles of these pill sieves are curved downward, so as to allow the sieve to stand on the table unsupported.

The PILL PLATE is of wood, about 4 inches in breadth, and is used for collecting the pills, or as a rest for the sieve. A smooth china dessert-plate is, however, a good substitute, and, in fact, more practical and elegant.

These machines, etc., are cleaned with a brush, but the wooden parts should not be allowed to remain too long in contact with water, while warm water should not be employed at all when the machines, etc., are made of horn.

Pills containing hygroscopic, volatile, or strongly smelling substances should be dispensed in glass bottles, and others in boxes.



Pill counter.

CLARIN'S PILL-COUNTER.

[A very simple and convenient appliance to be used when a considerable number of pills are to be counted and boxed, is made by A. B. Clarin & Co., of Paris, but may be readily constructed by any person possessed of any mechanical dexterity. The adjoining illustration requires no verbal description. On scooping up a quantity of pills and slightly shaking the apparatus, the holes in the false bottom are filled, and the remaining pills can then be poured out. On raising the false bottom, the pills retained by the openings drop through, and can be poured out by way of the spout.]

PRESCRIPTIONS FOR PILLS.

When a certain quantity or size of pills are prescribed, the weight of the ingredients is indicated, or the quantity is left to the compounder by the phrase *quantum satis* (*q.s.*), so that the necessary addition is made for the mass. The terms used for the number or weight of pills are:

Misce lege artis, fiant pilulæ No. (numero); or M. l. a., ut fiat massa pilularis, ex qua formentur pilulæ No. x. M. Fiant lege artis pilulæ ponderis x.

DIVIDING PILLS.

Thirty pills (twenty-four in this country) can be cut off by the machine. Therefore the mass to be made into pills should be divided in as many parts as 30 (or 24) enters into the entire number of pills ordered.

It is a very simple affair to divide a pill-mass into a certain number of pills, no matter what kind of a pill-machine may be at hand.

When the physician prescribes a pill-mass without the so-called *quantum satis* adjunct, with the indication of the weight of the pills, the compounder must add a powder to give the pill-mass consistency, but as it will then weigh more than intended by the prescriber, the mass must be so divided that the intended dose must remain the same in every pill, although they might be slightly heavier. They will not be too heavy if a suitable powder is employed. If, on the other hand, the prescription contains a *quantum satis*, the prescribed weight must be maintained. For instance:

	Gm.	Gr.
℞ Opii puri	0.5	7½
Herb. digital	2.0	30
Extr. Dulcamar	2.5	38

M. f. pil. pond. 0.125 (2 grains).

An adjunct of 0.85 Gms. (14 grs.) *Rad. Althææ pulv.* will be required to form the mass, but it will cause it to weigh so much more. Still only forty pills will be made out of it, so that each pill will only contain 0.0125 Gm. (⅕ gr.) *opium* and 0.05 Gm. (¾ grs.) of *digitalis*.

s, Pill sieve; *t*, Pill plate.

AGENTS FOR PRODUCING CONSISTENCE AND COHESION IN PILL-MASSES.

It is well known that to obtain good pills, the mass must contain in most cases a fibrous powder (vegetable powder). It is not sufficient to have the pills a good, round shape, and of firm consistency, they must be put up so as not to fall in pieces, and crumble, flatten out, or stick together, after a few days, when handled. A vegetable powder, especially a fibrous or mucilaginous one, entering into the composition of a pill is a guarantee of its keeping. As such a powder is not always prescribed by the physician, it is the compounder's duty to select one that has no effect on the action or chemical composition of the pills. The agents generally used for obtaining consistence and cohesion are as follows:

Powdered gum arabic is not a very valuable cohesive agent, when used freely to form the pills. For the same reason it is objectionable as an agent for obtaining consistency, but with a ten-per-cent addition of the powdered althæa root, it serves both purposes.

Powdered althæa root is the powder most generally used for the above purposes, the relatively small quantity of it required is owing to its mucilaginous character, and it is therefore valuable on this account. When too freely added to the mass, it not only lessens the action of the medicine by its mucilaginous matter, but also dries it up and hardens it so that it passes out with the fæces undissolved. The mucilaginous matter that forms on the surface of the pills renders them slippery, and weakens the digestive action on the hard pill core; besides, when the mass contains too much of it, it becomes elastic and tough, and the required globular shape cannot be given the pills. It therefore should be used only in small quantity (from 1 Gm. to 5.0 or 10.0 Gm.) as a cohesive agent, and employed to give consistence only when a less desiccating powder would add too much to the weight of a very soft pill-mass. Three parts of althæa powder require two parts of water to make the mass. In large pharmacies two kinds of constituent powder are kept on hand; they are made up from the following formulæ, and kept in glass vessels.

White Constituent.

	Parts.
℞ Althæa powder	10
Rye flour	10
Powdered sugar	10
Powdered orris root	70

This constituent is used only for white or whitish masses, and 25 to 50 Gm. kept prepared.

Salleron's Drop Counter.

Yellow Constituent.

	Parts.
℞ Althæa powder	15
Rye flour	10
Powdered sugar	10
Powdered orris root	50
Powdered gentian	15

This constituent is used for colored masses.

White bole is an excellent constituent for mixtures with salts that would be decomposed by vegetable adjuncts, such as pills containing nitrate of silver, chloride of gold, chromate, bichromate, permanganate, or chlorate of potassium, iodine, etc. The white bole, washed white, and consequently free from sand or carbonate, yields a good pill-mass with water; 10.0 Gm. requires about 3.6 Gm. of water. White beans powdered also form a good binding and constituent agent. Three parts well dried beans require two parts of water to obtain the proper consistency.

Powdered orris root is not a cohesive agent, but is, on the other hand, a harmless article to give consistency.

Powdered licorice root contains a considerable quantity of mucilaginous matter, and is consequently but a weak constituent. When the *extractum* or *succus liquiritiæ* is an ingredient, or when the pills are powdered with them, it is advantageously employed to give consistency, as it has but very slight medicinal effect. Two parts of it require one part of water to form the mass.

Powdered sugar without a mucilaginous adjunct makes a very poor mass as a rule. Syrup, in conjunction with

* The basis of this series of papers is the last edition of Hager's "Technik der Pharmaceutischen Receptur." The editors have, however, found it desirable to omit certain portions which relate to matters of practice peculiar to Germany and to insert others which are more characteristic of American customs. Editorial additions are inclosed in [ ].
The use of the original text has been kindly granted by Dr. Hager.

the althæa root powder, forms a very useful constituent.

Glucose is a very serviceable excipient for pill masses, but it is seldom prepared in suitable powdered form.

Powdered Tragacanth, in the form of a very consistent mucilage, is a good constituent for masses containing a great deal of salts. It can also be employed in smaller proportions to give consistence to very soft pill masses. It requires more than the same quantity of water, or three parts of simple syrup, or of glycerin, to make the mass. Tragacanth is always a suitable constituent when the mass is too soft, and the weight not to be increased. When the mass crumbles, a very little tragacanth powder and a few drops of glycerin are added; a little shaking will then give them the required plasticity.

Glyceritum Tragacanthæ, made of 3 parts tragacanth, 9 parts of glycerin and 4 parts of water, was recommended some years ago as a vehicle for pills, but the success attending its use was very small.* The althæa powder is to be always preferred.

The powdered *tubera salep* is also employed to give consistency to pills containing much aqueous extract; one part will absorb as much as three parts of water. It is only made use of, however, where the addition of other vegetable powders would increase the weight of the mass too much, but always in combination with a little althæa powder.

In adding water, or spirits of wine, to the mass to give it more consistency, the flask should never be used, but a little of the liquid poured into a spoon or small bottle, or better still a drop glass like that of Salleron's dropcounter, which should be kept half filled with distilled water.

Drops can never be counted with any degree of certainty from large bottles. Pill-masses with mucilaginous matters will bear water only, and no spirits of wine, as the latter makes them brittle.

Water can be advantageously replaced in all such cases by diluted glycerin or *aqua glycerinata*, a mixture of equal parts of glycerin and distilled water, as the mass is rendered more plastic, and slimy pills are not so hard when dry, and do not mould so readily. The hygroscopic quality of the glycerin does not come into play in this case, as is seen in practice.

As the above-mentioned dry constituents absorb a certain quantity of water, for which a certain time is required, they must be added carefully, and allowance made as if for a rather soft mass.

Vegetable-powder ingredients will always take a certain time to combine with the humidity. A mass that has been well prepared and is plastic may become quite brittle after fifteen minutes, owing to the absorption of the water adjunct or the humidity of the pasty extracts. If the mass is large, it should be left standing for ten or fifteen minutes, and then, if necessary, its plastic state may be restored by adding a little more dilute glycerin, if this should prove necessary.

PILL MASSES WITH VEGETABLE POWDERS; EXTRACTS AND SYRUPS SOLUBLE IN WATER.

Good pill masses are obtained by mixing vegetable powders with extracts. If the former contain some mucilaginous ingredients, so do the saccharine extracts; but the proper proportions of the quantities will correct all this. As a rule, 1½ to 2 parts of powder require 1 part extract of soft, pasty consistency, and ¾ to 1 part of powder to 1 part of an extract that has almost the pill consistency. Mucilaginous powders require on an average ¼ extract more; as Senega-root powder, Colombo nut, and Barbadoes nut. Such mucilaginous substances seldom require any addition of althæa powder or other viscid constituent.

The quantity of the extract or syrup adjunct is usually left to the judgment of the compounder, who does not add them at once, but in two or three portions, or according as the mass is kneaded.

Extracts should not be taken from bottles with the same spatula used for working the mass, but a clean one used instead; and the extract cleaned off with the pill spatula, or rather with the pill measurer.

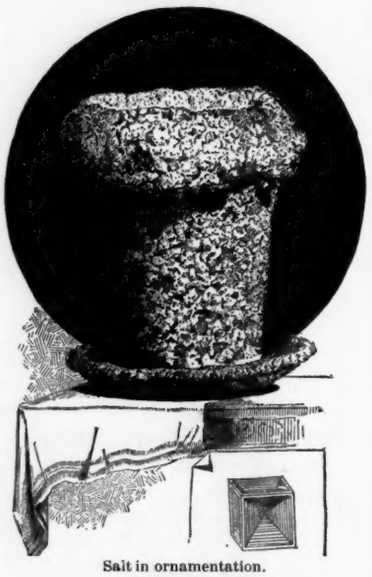
The following are examples:

℞ Herbæ Digitalis..... 5.0
Extr. Hyoscyami..... q. s.
M. fiant massa pil., ex qua form. pil. No. 50. Consperg. Rad. Irid. pulv.

℞ Herbæ Digitalis..... 5.0
Extracti Hyoscyami..... (2.5)
Rad. Althææ pulv..... 0.3
Fiant pilulæ 50, etc.

℞ Rad. Rhei opt.,
Rad. Gentian.....āā 7.5
Extr. Gent..... q. s.
M. fiant pil. pond. 0.125.

℞ Rad. Rhei opt.,
Rad. Gentian.....āā 7.5
Extr. Gent..... (9.5)
M. fiant pilulæ pond. 0.125 (No. 196).



Salt in ornamentation.
[See p. 205.]

If the quantity of the extract that has been prescribed is too large, so that the mass will be too soft, the extract, if of special activity, should be added in a dry state, if convenient, or else some other agent for producing consistency.

Specially adapted for this purpose is $\frac{1}{10}$ or $\frac{1}{16}$ of the weight of powdered tragacanth. When the constituent powders are mixed with the extract in this proportion, the mass should be left undisturbed some ten or fifteen minutes before being made into a mass, as it does not thicken at once, as has been mentioned before. If the extract, however, does not possess any peculiar action, a lesser quantity is used, and the powder of its vegetable is added in sufficient quantity. When too little extract is prescribed, some dilute glycerin or water are added; or, if there is a paucity of the cohesive agent in the mass, some althæa or constituent powder should be added.

Examples.

℞ Herbæ Digitalis,
Extr. Hyoscyami.....āā 2.5
M. fiant pilulæ numero 50. D. S. as directed.

℞ Herbæ Digitalis..... 2.5
Extr. Hyoscyami sicci..... 1.0
Extr. Hyoscyami..... 20.0
M. fiant pilulæ numero 50.

℞ Rad. Rhei.....10.0
Extr. Gentianæ.....20.0
M. f. pil. pond. 0.15.

℞ Extr. Gentianæ..... ....20.0
Rad. Althææ pulv..... 1.5
Terendo exacte mixtis adde
Rad. Rhei... .....10.0
Rad. Gentian. pulv. .....q.s. (1.5)
Fiant pilulæ No. 200.

℞ Quininæ Sulphatis 2.5
Pulveris Aromatici 5.0
Extracti Trifolii..... .2.5
M. f. pil. 100. Consperg. cassia cinnam. pulv. D. S.

℞ Quininæ Sulphatis 2.5
Pulveris Aromatici 5.0
Extracti Trifolii..... .2.5
Rad. Althææ pulv.....0.5
Glycerini,
Aquæ destill.....ana gtt. 15
M. f. pil. 100, etc.

℞ Extr. Calombæ,
Fellis Tauri dep.,
Rad. Rhei pulv.....āā 5.0
Ligni Quass.....q.s.
Fiant pil. No. 150. Consp. Cass. Cinn. pulv. D. ad vitrum.

℞ Extr. Calombæ (sicc.),
Fellis Tauri dep. sicci,
Rad. Rhei pulv.....āā 5.0
Rad. Althææ pulv.....1.0
Glycerinæ,
Aquæ dest..... .ana 2.0 (vel q.s.)
Fiant pil. No. 150, etc.

The physician believed that the Colombo extract and the *Fel Tauri depuratum* were of a slimy consistency; the *Lignum Quassiæ* is introduced only as a constituent, and could be advantageously replaced by some althæa powder, or even by water. The althæa powder might be omitted. Still, it prevents the ox gall from absorbing moisture from the air.

℞ Quininæ Sulphatis.....2.5
Extracti Gentianæ .....q.s.
M. f. pil. No. 50. Consperge Lycopodio. D. S. Ten pills every morning and evening.

℞ Quininæ Sulphatis.....2.5
Extracti Gentianæ.....2.0
Rad. Gentian pulv.,
Rad. Althææ.....ana 0.5
Glycerinæ dilutæ .....gtt. 10.

Sulphate of quinine, with gentian and other similar extracts, shows a certain plasticity after compounding, but the mass crumbles on being rolled. If some acid (10 drops of dilute sulphuric acid, or 5 drops of muriatic acid to 1.0 Gm. or 15 gr. quin. sulph.) is added with a little althæa powder, the mass at once attains the required plasticity. If it be a rule that quin. sulph. be invariably dissolved by the addition of an acid to mixtures, the same rule makes this solvent addition equally justifiable when the drug enters into pill masses.

NOTE.—[We have mentioned above that this is not proper. If the quinine salt is not specially directed to be dissolved in mixtures, it should be only mechanically suspended.]

PILL MASSES WITH SOAP POWDERS.

Soap powder yields the best pill masses in combination with vegetable powders, extracts, resins, and gums. Of course, acid salts or acids and tannic preparations are prone to deprive them of this quality, as can be very easily understood. In using them, care must be taken that they do not come into contact with too much moisture. A mixture of soaps and extracts with powders may appear somewhat dry and brittle when first kneading the mass, and so much so as to create the impression that a little more water or extract might be necessary. Great care must be taken in this regard, however, as continued kneading

* [This statement is altogether wrong. The article in question is of great utility in certain cases; see below.]

of the mixture may render it too soft, and an inert constituent may be required, thus unnecessarily increasing the weight of the pill-mass. It would be improper to throw away the excess in such cases, and it behooves honest compounders to make up the mass again if the pills are too large. Half of the soft pill-mass should be taken and mixed with half of forementioned dry ingredients. It is quite immaterial if the pills are somewhat larger on account of this excess. A few drops of the dilute spirits of wine (*spiritus vini dilutus*) will make the soap solution a great deal softer and more pliable than water could, and for this reason the addition must be made with much more care. Example:

	Gm.	gr.
℞ Rhei pulv.	6	90
Ext. Taraxaci.	6	90
Ext. Trifolii.	6	90
Saponis.	6	90
Make pills each weighing 0.15 Gm. (2¼ gr.).		

	Gm.	gr.
℞ Rhei pulv . . .	6	90
Ext. Taraxaci.	3	45
Ext. Trifolii.	6	90
Saponis.	6	90
Tragacanthæ.	q.s.	q.s.
Make 60 pills.		

In this last instance the weight of the mass of extract is excessive, and it would have the consistency of an ointment. Therefore the Radix Rhei, the *Extractum Trifolii*, and the soap should be first added in the above quantities, but only one-half the weight of the extract of dandelion, which is really the least efficacious of the ingredients, and the other half should be substituted by tragacanth. If the prescription were followed to the letter, a mass would be obtained which will yield 160 pills, each weighing at least 0.3 Gm.

	Gm.	gr.
℞ Aloes.	2.5	38
Extr. Rhei.	5.0	75
Extr. Hellebori Viridis.	1.5	24
Saponis.	1.5	24
Make 100 pills.		

	Gm.	gr.
℞ Aloes.	2.5	38
Extr. Rhei (sicci).	5.0	75
Extr. Hellebori Viridis.	1.5	24
Saponis . . .	1.5	24
Althææ pulv . . .	1.0	16
Glycerin dil.	gtt. 15	gtt. 15
Make 100 pills.		

PILL-MASSES CONTAINIG GUM-RESINS AND RESINS.

Gum-resins and resins should always be used in a very finely powdered state. As they adhere firmly to the mortar and the pestle in compounding, these should be rubbed with a little paper dipped in almond oil. Resinous powders compounded with a few drops of spirits of wine are generally serviceable, and keep their shape, but not so in the possession of the patient. This, however, does not recommend them to the dispenser who understands his art.

Most gum-resins and resins, especially aloes, require a slight addition of vegetable powder—*althæa* root, for instance. *Asafœtida* will yield a pill-mass with a few drops of weak spirits of wine, from which tenable pills can be formed. Alcohol must not not be added to *aloes* when this is inferior in proportion to the accompanying powder or the mucilaginous substances, as pills prepared with them have a tendency to flatten.

Care should also be taken not to add too much spirits of wine when compounding resins, especially if any soap powder is added. Sometimes the mixture would seem to require an addition of spirits of wine, but the dispenser must not be led astray by this appearance. Prolonged kneading is requisite as the mass becomes more plastic, while any further addition of spirits of wine would only have made the mass too soft.

These pill-masses should always turn out firm on account of the above-mentioned reasons. Dilute spirits of wine, or even spirits of soap, should be used with gum resins, and 90 per cent spirits (about 5 to 6 drops to the 10.0 Gm.) for resins when the mass consists of resinous substances only, as these powdered ingredients produce good pill-masses with a watery extract and vegetable powder. A resinous pill-mass can be easily kept from crumbling by the addition of a few drops of spirits of wine, or even by a very small addition of soap powder, excepting, of course, with metallic or earthy salts. It happens very often in summer that the consistency of the gum resins is such that they can hardly be finely powdered. In such cases they must be made kneadable, slightly warming them in a water-bath.

PILL MASSES CONTAINING FLUID OR SOFT RESINS, FLUID BALSAMS, OILS, AND FATS.

If the proportion ordered of the above is too great to form a suitable mass with the powders to be added, of which they require but a small quantity, recourse must be had to wax. *Balsamum Copaivæ*, *Balsamum Peruvianum*, *Unguentum Hydrargyri*, *Extr. Cubebæ*, Oleoresin of Male Fern, and similar ones, also *Creasotum*, *Acidum Carbolicum*, and *Olea Ætherea*, with a third to as much wax melted together at a gentle heat, produce very good masses, but such a wax mixture should be *perfectly cooled* before it is mixed with the other ingredient. The opposite results from an endeavor to render these wax mixtures plastic by the addition of ether, spirits of wine, etc. The wax is melted in a small porcelain pan and not in the pill mortar, the thick bottom of which requires a higher temperature, and therefore cools off more slowly. The dispenser of the medicines must use every precaution not to modify the efficacy of the medicines by any of his manipulations. If the ingredients are too strongly heated, they will loose a portion of their most efficacious constituents. Only yellow wax is used in such mixtures. The wax is first melted at a gentle heat; then mixed with an equal weight of the balsam, and only shortly before resumption of its solid form the other balsamic ingredients should be added. Balsams should never be mixed with calcined magnesia, gum arabic, or powdered pine resin, unless specially ordered by the physician. An addition of wax, if but in small quantities, is always advisable, even if the constituent powder were sufficient, as the mass will be the better thereby, and the pills more easily formed. Example:

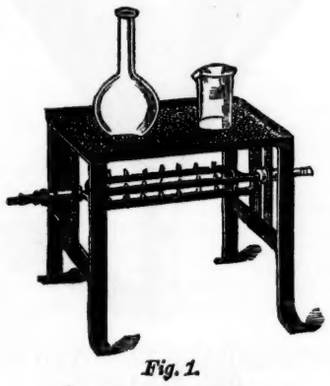
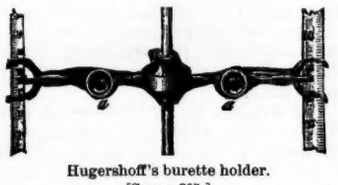


Fig. 1.

Rüdorff's portable sand-bath.
[See p. 205.]



Hugershoff's burette holder.
[See p. 205.]

	Gm.	gr.
℞ Bals. Copaivæ.	25.0	400
Cubebæ pulv.	q.s.	q.s.
M. ut fiant pilulæ No. 500.		

12.5 Gm. (200 grains) of yellow wax is melted with 10.0 Gm. (150 grains) of the balsam, and mixed with the remaining 15.0 Gm. (225 grains) previous to cooling. When the mass is completely cooled, it is converted into a pill mass by the admixture of the requisite quantity (2 ℥) (60 Gm.) of cubeb powder.

In many drug stores where copaiva pills have to be frequently put up, a preparation (*Balsamum Copaivæ ceratum*) is kept in stock consisting of two parts Balsam Copaiva, and 1 part *Cera flava*. Three parts of this mixture require five parts of the Cubeb powder to form a pill mass. The Balsam of Copaiva may be given more consistency by the addition of calcined magnesia, with which it forms a saponaceous combination at the same time. This process, however, is accomplished slowly, and does not allow the pills to be made before the lapse of from twenty-four to forty-eight hours. If the mixture is slightly warmed and a few grammes of water are added to it, the desired consistency of the mass is attained sooner. [Such a preparation is officinal in the U. S. Pharmacopœia under the title of "Massa Copaiba."]

It is preferable, however, to keep on hand *Balsamum Copaivæ Magnesia Solidificatum*, and especially so as this preparation, kept in tightly closed porcelain vessels, is not liable to deterioration. 100.0 Gm. of balsam are mixed with 45 Gm. of calcined magnesia, and 5.0 Gm. of water, and the mass heated for an hour at a digestion heat of 50° (122° F.), and after being well stirred, laid aside during ten days, after which time it has become so consistent, that it can usually be converted into a mass with something less of the same quantity of powdered cubebs. The proportions above indicated are the ones usually observed, as a mixture of 100.0 Gm. copaiva balsam, 10.0 Gm. calcined magnesia, and 5.0 Gm. of water also yield a solidified balsam after the lapse of two to four weeks.

The following drugs, with from one to two parts of melted *Cera flava*, and mixed with four or five parts of dry organic powders, give very good pill masses when thoroughly cooled.

Carbolic Acid.	Coal Tar.
Apiol.	Croton Oil.
Camphor.	Petroleum.
Coniine.	Ol. Myristicæ Æth.
Oleoresin of Male Fern.	Ol. Nucistæ.
	Oil of Tar.
Creasote.	Propylamine Trimethylamine.
Nicotine.	
Tar.	

When the physician allows the dispenser to select the constituent, or when an inert one is prescribed, he will do well to use *Cera Flava*, which is a very inoffensive drug.

If a vegetable powder is added to a balsam or oily mixture, and the powder contains moisture, the pills may crumble after all. To avoid this, the vegetable powders should first be dried at a gentle heat in the steam bath, or the humidity should be first absorbed by some tragacanth powder. Ethereal oils, *Olea Ætherea*, offer no great obstacles to the formation of a good mass. If large quantities are to be added, they are first mixed with as much wax, which is liquefied in a small porcelain vessel, or made into a doughy mass with

powdered resin to which some vegetable powder is added. If gum resins or resins are to enter the preparation, they are to be mixed with it without any addition of colophonium or wax. The mixture of the ethereal oils and wax can also be made, heating them in a test-tube. It can be easily poured out after heating the external surface of the tube.

(To be continued.)

Apomorphine Muriate.

A PATIENT having complained of symptoms of sickness following the administration of a solution of morphine which was eleven months old, Dr. Hager, after applying some inconclusive tests, decided that the solution must contain apomorphine, and, therefore, that no solution of morphine muriate (hydrochloride) ought to be used medicinally which is more than a month old. Mr. Dott having in his possession a solution of morphine hydrochloride, which was exactly five years old, submitted it to chemical examination, and found not a trace of apomorphine. There is, therefore, no evidence (nor the least likelihood) that apomorphine is produced in solutions of morphine salts "by keeping."

As regards the tests for apomorphine, it was ascertained that the deep-green color developed by oxidation in a neutral or faintly alkaline solution is the most delicate and characteristic reaction. The coloration is quite distinct with 1 part of hydrochloride in 100,000 of water. The best method of applying the test is to render the solution (placed in a porcelain basin) just perceptibly alkaline with bicarbonate of potassium, when, in the course of a few minutes, the green color will be perceptible if apomorphine is present.

The solubility of apomorphine hydrochloride is 1 part in 50 of water at ordinary temperatures.—*Chem. and Drugg.*

Urethan as a Narcotic and Soporific.*

URETHAN is another name for the ethyl ether of carbamic acid, which latter may be regarded as one of the derivatives of urea. Carbamic acid ($CH_3NO_2 = NH_2CO.OH$) does not exist in a free state, but some of its salts occur in the serum of dog's blood. Carbamate of ammonium is familiar to pharmacists by reason of its forming a constituent of carbonate of ammonium. Whenever ammonia and carbonic acid, either dry or moist, come together, some of this salt is formed. Urethan is carbamate of ethyl, $C_3H_7NO_2 = NH_2CO.C_2H_5$. It may be obtained in various ways, as, for instance, by passing cyanic acid into alcohol; or by heating nitrate of urea with absolute alcohol to 120–130° C., or by acting with ammonia upon ethyl carbonate. It forms colorless prismatic crystals or scales, having a faintly aromatic odor, and a cooling, faintly aromatic taste. It is easily soluble in water and in alcohol, also in ether and chloroform. Its aqueous solution is perfectly neutral. At 50° C. it melts to a clear, colorless liquid. At 180° C. it boils, and when ignited on platinum, it takes fire and is completely dissipated. When heated with ammonia, in a sealed tube, to 180° C., it is converted into urea and alcohol. When taken internally, it is also eliminated as urea.

Dr. R. Kobert of the University of Strassburg, in the beginning of the present year, requested Dr. R. v. Jaksch, of Vienna, to make clinical experiments with urethan, which had been ascertained to possess narcotic and soporific properties by Schmideberg in and Jolly, in Strassburg. But, though the compound had been known to chemists for many years, none could at first be obtained in the market, until finally Merck, of Darmstadt, undertook its preparation. Special apparatus had to be constructed for making it, and the first considerable instalment received by Dr. Jaksch amounted to 200 Gms. (a little over 6 oz.). The price charged for this was $18.48, but this is, of course, no criterion for its ultimate market-price, should it become an important remedial agent, which is predicted by Dr. Kobert.

Regarding the physiological effects of the substance, Dr. Jaksch found it to act (in 20 cases) so promptly and so free from secondary effects, that an important future may be anticipated for the drug. One of its great advantages, particularly over paraldehyde, is this that it is easily taken and borne by patients.

Further reports are expected shortly.

* From a paper by E. Ghillany published in the *Zeitsch. d. Oesterr. Apotheker Vereins*, 1885, No. 24, supplemented by some notes of our own.—ED. AM. DRUGG.

BUTTERFIELD'S IMPROVED FUNNEL STRAINER.

THE accompanying illustration represents one of the most simple, yet durable and convenient, improvements for use by apothecaries, as well as in the household, for straining liquids, that has come under our notice for some time.

The strainer is, by preference, made of wire cloth rolled into conical, tubular shape to fit tightly in funnel tubes of different sizes. The upper or larger end of the strainer is closed by a metal cap, which is provided with a ring or knob by which the strainer may be conveniently handled when not in use. The lower end of strainer is open, and provided with a metal thimble which protects the wire cloth from wear, and fits snugly into the funnel-tube, so that no liquid can pass out of the funnel without first passing through the strainer. Ordinarily it is about five inches long, an inch in diameter at the larger end, and tapers gradually to a very small circumference. There are several sizes. Any further particulars may be had by addressing the inventor, Mr. F. O. Butterfield, No. 6 Vine street, Lynn, Mass., who has very recently been granted a patent.

Impurity of Commercial Amyl Nitrite.

MR. A. H. ALLEN has reported that three samples of amyl nitrite obtained from well-known houses contained only about 80% of real amyl nitrite, while a sample prepared in a less perfect manner contained less than 50% of the active constituent. Further examination showed also that a solution of amyl nitrite in alcohol deteriorates very rapidly. A sample which yielded 36 C.c. of gas on Aug. 18th, gave only 15 C.c. on Sept. 7th.—*Chem. and Drugg.*, Sept. 15th.

Toothache Cure.

A. GAUDET makes a report on a preparation which has come under his notice, in form of a sample in the possession of a female customer, who praised it greatly. He succeeded, after numerous trials, in ascertaining its composition, which is as follows:

Mastic, tears	8 parts.
Balsam Peru	5 "
Chloroform	14 "

Dissolve the mastic in the chloroform, then add the balsam. After twelve or fifteen hours, filter. For use, place two or three drops upon a small pellet of cotton, which is to be introduced into the cavity of the hollow tooth.

Ointment for Freckles.

ACCORDING to Dr. Ch. Heitzmann, the ointment for freckles recommended by Wertheim, of Vienna, consists of:

White Precipitate, Subnitrate of Bismuth, of each	1 drachm.
Glycerin Ointment	1 ounce.

This is to be applied in a thin layer on alternate nights, and is followed by satisfactory results in a month or six weeks.

Gelatinized Benzin.

GELATINIZED benzin is prepared as follows: 120 parts white soap are dissolved in a liter bottle in 180 parts hot water, 30 parts spirits of ammonia added, and the whole brought, with water, to ¾ lit., then filled up with benzin, and well shaken through. One teaspoonful of this solution is mixed in a ¼ liter bottle with a little benzin; when well mixed, the bottle is gradually filled, under continued shaking, with benzin. With this gelatin any stains may be removed without injury to the most delicate colors. The gelatinized benzin volatilizes with difficulty.

"Mosquito Oil."

Ol. Picis liquidæ	℥i.
Ol. Olivæ	℥i.
Ol. Menth. puleg.	℥ss.
Spt. Camph	℥ss.
Glycerini	℥ss.
Acid. carbolici	℥ij.

Shake well together.

ANOTHER.

The Angler vouches for a mixture which, it says, is effectual in protecting from the attacks of mosquitoes:

Olive oil	3 parts.
Oil of pennyroyal	2 "
Glycerin	1 part.
Water of ammonia	1 "

To be mixed and shaken before applying to the face and hands. Avoid getting the mixture in the eyes.

Mixture for Whooping Cough.

Tinct. Belladonnæ	℥v.
Tinct. Valerian[æ]	
Tinct. Digitalis	āā gr. lxxv.

For a child two years old, begin with five drops daily; increase by five drops daily, until the dose reaches thirty drops. For older children the initial dose and increase *per diem* may be 10 drops. Tr. of musk may be used in the place of valerian when the latter is not tolerated.—H. ROGER, in *Union médicale.*

Formula for Terpene.

Terpene	℥iss. (by weight).
Alcohol (85%)	℥v.
Water	℥iss.

Two teaspoonfuls daily in divided doses, with meals.—GERMAIN SÉE in *Rev. méd. Franç. et étran.*

SALT IN ORNAMENTATION.

C. F. HOLDER (in *Sci. Amer.*) says, in speaking of the curious mineral incrustations derived from the springs of the Yellowstone Park, that without going as far, very beautiful decorative effects can be produced by placing a little salt and water in a glass (or other convenient vessel). After a day or two a slight mist will be seen upon the glass which will grow hourly, until the glass will shortly present the appearance shown in the illustration, the glass being enlarged to twice its thickness, by the deposit of beautiful salt crystals. A dish must be placed below the glass to limit the "creeping" tendency of the crystals. By the introduction of colored inks, any desired shade of crystals can be obtained.

[See page 202 for illustration.]

BURETTE HOLDER.

A NEW burette holder, so constructed that the graduation of the burette is not covered by it, has been devised by Franz Hugershoff of Leipzig. It has the additional advantage that the burette may be easily removed from or put back into the clamp. It may be had either with one or with two arms. —*Chem. Centralbl.*, No. 30.

[See illustration on page 203.]

PORTABLE SAND-BATHS.

THE accompanying illustrations represent a form of portable sand-baths, devised by Prof. Rüdorff, and made in two sizes, the heating surface of the smaller one being 10x6¼ inches, that of the larger 26½x6½ inches. Heat is applied by means of a coil of gas pipe, perforated at suitable distances. Both ends of the pipe are provided with adjustable fittings, but so that one end is closed while the other is open, and is connected with the supply of gas, the fitting at this end being provided with suitable inlets for air to mingle with the gas. The coil of pipe may be raised or lowered, and fastened at any height in the stirrups through whch it passes, whereby the temperature may be graduated.—*Chem. Zeit.*, No. 67.

[See illustration on page 203.]

A New Method Detecting Oil of Turpentine in Essential Oils, Balsams, etc.

A NEW work by Dr. Hermann Hager has just come to hand, the title of which, translated into English, is: *Chemical Reactions for the Detection of Oil of Turpentine in Ethereal Oils, Balsams, etc. For Chemists, Apothecaries, Druggists, and Manufacturers of Ethereal Oils.** Dr. Hager finding himself, in February, 1885, in the unwonted enjoyment of literary leisure, took up the subject of the detection of oil of turpentine in essential oils, which he had repeatedly studied without finding any reliable methods. After forty days of continued and useless labor, he happened to bethink himself of a peculiar behavior of ethereal oils towards resins, but no tangible results were obtained even then, until he happened to experiment with *resin of guaiac*, which finally turned out to be the key to the mystery. The result of his experiments is laid down in the work above quoted, and any one who wishes to obtain a full insight into the method and its practical application should be in possession of the original. For those who cannot obtain or make use of it, the following abstract will be serviceable.

* *Chemische Reactionen zum Nachweise des Terpentinöls in den ætherischen Oelen in Balsamen, etc. Für Chemiker, Apotheker, Drogisten, und Fabrikanten ætherischer Oele.* Von Dr. Hermann Hager. 8vo, Berlin (Springer), 1885, pp. 166.

The guaiac reaction is based upon the behavior of many essential oils towards oil of turpentine, in stimulating or starting the ozonizing power of the latter. There are, however, many other essential oils which possess this power but feebly or lack it altogether.

In a general way—omitting details for the present—the behavior of an essential oil towards resin of guaiac in presence or in absence of oil of turpentine, is shown by the following reactions:

1. *In absence of oil of turpentine.* Put a small pinch of freshly powdered resin of guaiac into a test-tube (*A*), add 1 C.c. (or 25 drops) of oil of spike lavender, and heat to near boiling, then remove the test-tube, so that the undissolved resin may settle. The oil will then be observed to have a *yellow* color.

2. *In presence of oil of turpentine.* Put a small pinch of freshly powdered resin of guaiac into a test-tube (*B*), add 1 C.c. (or 25 drops) of oil of spike lavender and 5 drops of rectified oil of turpentine, then boil or heat to near boiling, and remove the test-tube as before. The oil will then be found to have a *deep violet* tint.

The tint of the oil may often be better observed by adding to the oil, after heating, 1 to 2 C.c. of chloroform, amylic alcohol, absolute ethyl alcohol, benzol, etc. In many cases the oil may be diluted before boiling.

Rectified oil of turpentine, when boiled alone with resin of guaiac and alcohol, acquires only a yellow color. Or when boiled with resin of guaiac alone, it remains almost colorless, and does not become strongly yellow, nor does it show any color after cooling.

The oil of spike, therefore, which was present in the above reaction (No. 2), exerted a peculiar action upon the oil of turpentine, which Dr. Hager assumes to be an ozonizing one, and in consequence thereof the violot tint appeared.

While oil of spike is thus able to bring about this reaction, there are many other oils which fail to produce it. In order, therefore, to show the presence of oil of turpentine in such oils, *it becomes necessary to add to them a small proportion of some oil which possesses the ozonizing power.*

For the purpose of studying or carrying out these reactions, essential oils may be divided into three classes:

1. Oils which themselves are inclined to produce ozone. The most prominent of these is *oil of turpentine*, particularly when rectified. This property is possessed in a less degree by oil of tansy, rue, juniper berries, santonica, and those of several mints. Dr. Hager calls these "Ozonoprothym-Oele" (= "oils inclined to produce ozone"). It might be permissible to employ the term "ozonogenic oils" in English.

2. Oils which themselves are not "ozonogenic," but are capable of exciting the ozonogenic power in oil of turpentine, particularly with the aid of heat, causing the latter to color resin of guaiac blue or violet. Dr. Hager calls these oils "Stimulatoren," that is, "stimulatory oils." Such oils are many varieties of oil of citronella, spike, calamus, cedar wood, etc. Whether an oil is strongly stimulatory or only feebly so, is ascertained as follows: Boil a pinch of resin of guaiac with a few drops of alcohol, add 1 C.c. of oil of turpentine, and then add a few drops of the respective oil. If a dark violet color appears at once, the oil is strongly stimulatory. If it needs to be warmed or boiled to produce the tint, it is feebly stimulatory.

Some of these stimulatory oils must be kept on hand for carrying out the reaction. Dr. Hager found that some commercial oil of calamus is stimulatory; this variety he calls Oleum Calami normale. He also found commercial oil of citronella to have this property in a high degree, and recommends it for this purpose. As feebly stimulatory he recommends oil of cedar, santal, and spike. Of course, before any such oil can be placed among the stock of reagents, it must be shown, itself, to be free from oil of turpentine, which is proved by its producing no violet or blue tint when heated with resin of guaiac alone.

3. Oils which behave indifferent when brought in contact with resin of guaiac and oil of turpentine. Dr. Hager calls these "Adiaphoren." "Indifferent" or "Non-ozonizing Oils" might be a suitable English term.

Sometimes different brands of one and the same oil were found to belong to different classes: and *rectified* oils usually showed a different behavior from the natural oils. The fact is, each oil must be studied by itself, and Dr. Hager himself states that much more extended researches are necessary to clear up every point. Yet he has already brought forward such an array of analytical proofs of the reliability of the new method, giving in detail the reactions obtained with more than 100 essential oils, that its great utility is even now amply demonstrated.

As it has been stated above, the presence of oil of turpentine in the stimulatory oils is very easily detected. In the non-ozonizing oils it is also readily discovered by adding a little of a stimulatory oil. Somewhat more difficult, however, is the detection of oil of turpentine in the ozonogenic oils (oil of turpentine being itself, of course, excepted). These latter oils require some modification of the test in order to distinguish between the pure oil and that containing turpentine. In such cases recourse may be had to some oils which are "antiozonoprothym," that is, which neutralize the ozonizing power, like some varieties of oil mace. Or *feebly* stimulatory oils may be added, and the solution diluted with petroleum benzin, either alone or mixed with other liquids. When petroleum benzin is used, boiling is always necessary. On the other hand, boiling is generally to be avoided in the case of the ozonogenic oils, when diluted with benzol, chloroform, or alcohol.

To carry out the reaction, the following reagents and apparatus are necessary.

1. *Crude Resin of Guaiac*, in pieces. If purified by alcohol, or kept for some time in powder, it is useless. The proper quantity needed for a set of experiments not extending over more than two days may be rubbed to powder, and must be kept from sun-light. It is best, however to powder a little separately for each test. The powder should have a grayish-white color. A pinch of it, mixed with 1 C.c. each of oil of turpentine and absolute alcohol, should not acquire a violet tint, not even on boiling; the solution should be merely yellow. The amount to be used for each test is about 2–2½ grains (0.12 to 0.15 Gm.). To save space, we shall call this reagent hereafter simply "guaiac."

2. *Rectified Oil of Turpentine.*—This should not be old, perfectly limpid (and therefore not hydrated), and should not have been in contact with wood. Old or hydrated oil becomes bluish with alcohol and guaiac. Its proper condition is tested by heating it with alcohol and guaiac, as stated above. We shall designate this reagent by the abbreviation "Turp."

3. *Two or three Stimulatory Oils*, a strong one, say oil of citronella, and a weak one, say oil of spike, oil of cedar, and oil of santal. How their power should be tested has been mentioned before.

4. *Some Diluents*, either to enable the operator better to recognize the tint of the liquid, or to facilitate the solution of the guaiac and oil. Such

diluents are: anhydrous alcohol, chloroform, amylic alcohol, benzol, petroleum-benzin.

5. *A Dropping Glass* for absolute alcohol.

6. *Narrow Test-tubes*, about $\frac{7}{16}$ inch wide and at least 4 inches long. They must be perfectly dry inside, to prevent the powdered guaiac from adhering to the sides, when poured in.

7. *A small Porcelain Mortar*, glazed inside.

8. *A Petroleum Lamp* with circular burner. As it is often dangerous to heat volatile, inflammable liquids to boiling over a naked flame, Dr. Hager strongly recommends holding the test-tubes over the chimney of a petroleum lamp, best so that both test-tubes are held obliquely over it at the same time, in order to expose them to the same conditions. If a naked flame must be used, longer test-tubes (ab. $\frac{7}{16}$" wide and about 6' long) should be used.

Whenever "guaiac" alone is mentioned hereafter, a quantity of about 2 or 2½ grains of the freshly-prepared powder is meant. When any liquids are mentioned, and no other quantities are specially directed, 1 cubic centimeter (ab. 16 minims) is understood in each case. In most cases the liquids may be taken by drops, 1 C.c. being about to equal to 24 large or to 30 small drops.

The reaction itself is performed as follows:

Take two of the test-tubes, of which one should be marked with a diamond or with ink (made lasting by holding over a flame). Both are grasped between the thumb and index-finger of the left hand, and powdered guaiac placed in both. 10 to 20 drops of abs. alcohol are then added to each (an equal amount to each), and afterwards the oil. Or the oil may be added directly to the guaiac. Into the test-tube provided with a mark (which we shall always designate, after Dr. Hager, with *B*, while the other will be meant by *A*), 3 or 4 drops less of the oil to be tested are added, next 4 large or 5 small drops of Turp. are poured in, so that both test-tubes contain equal volumes of liquid. If any diluent is added, an amount of about 1 C.c. is used.

In the case of highly expensive oils, half the quantities of the reagents and proportionately smaller test-tubes may be used.

As the various diluents, in the case of many oils, do not always behave alike, it is best, when repeating the test on one and the same oil, to vary the diluent each time.

The relative quantities of the reagents and other ingredients which may be used under different circumstances are the following:

Test-tube.	Guaiac. Grains.	Abs. Alc.* Drops.	Ess. Oil. Drops.	Turp.* Drops.	Diluent.* Drops.	Stim. Oil. Drops.
I. A	ab. 2	10–20	28–30	0	30	1–5–10
B	ab. 2	10–20	24–26	4–5	30	1–5–10
II. A	ab. 1	8–15	14–15	0	15	1–2–4
B	ab. 1	8–15	12–13	2–3	15	1–2–4
III. A	ab. ¼	20–30	6–7	0	0	1–2–3
B	ab. ¼	20–30	6–7	1–2	0	1–2–3
IV. A	ab. ⅛	15–20	3–4	0	0	1–2
B	ab. ⅛	15–20	3–4	1	0	1–2

* None of these liquids must have been in contact with wood.

In the case of very expensive oils, scheme III. or IV. will answer.

The test-tube containing the mixture of the oil and reagents without turpentine is designated by *A;* that containing, in addition, the turpentine, with *B*.

When it happens that mixtures containing "non-ozonizing" oils, in both test-tubes *A* and *B*, show a yellow color after boiling, and it becomes necessary to add a stimulatory oil (such as oil of citronella), this should be added only in single drops (1–2–3), if it is energetic. If no change of color occurs in *B* after 5 minutes, 1, 2, or 3 drops more of the stimulatory oil are added, or the mixture gently warmed (to 86°–104°–140° F.), until the color in *B* changes. This warming is done by placing the test-tube into a beaker containing a volume of water 1½ to 2 inches high, and standing on a layer of sand over a water-bath heated by a lamp. A thermometer should also be placed in the beaker. The heat is always continued until the contents of test-tube *B* (containing the added turp.) exhibit a change or darkening of color.

When boiling is prescribed, this is understood literally. When the liquid is covered with a foam about ¼ inch in height, it should be withdrawn from the flame. Sometimes a repeated boiling is of advantage.

When a diluent is needed, Dr. Hager prefers benzol. Benzin has the property of retarding the action of the ozonogenic oils, but, as it is a poor solvent of the guaiac, each C.c. of it should be diluted with 15–20 drops of abs. alcohol to obtain a clear liquid. Whenever the mixture of guaiac, oil, and diluent is turbid, absol. alcohol should be used, of which 15–20 drops will usually produce a clear solution.

When examining ozonogenic oils by the aid of stimulatory oils, the change of color produced in test-tube *B* is followed after one, two, or three minutes by a change of color in the test-tube *A* (to which no turp. had been added), although the liquid was free from turp. If this interval were not longer than 10–30 seconds, the presence of turp. would be indicated, *unless* the color in the two test-tubes varies considerably, as, for inst., carmine and bluish-violet, reddish-violet and blue. Such differences speak for the absence of turp. There are also some few cases in which the contents of *A* assume a dark, and those of *B* a lighter color. If these tints differ, the absence of turp. must be assumed in such cases likewise.

The results obtainable with one and the same oil may be varied in many ways. Either the oil may be directly boiled with the guaiac, or it may first be boiled with 10–20 drops of abs. alcohol. and the oil added to the hot or cold solution; after awhile, the boiling may be repeated. These apparently identical experiments often yield different results. Sometimes the choice of the diluent is of importance. When compelled to repeat a test with modifications, the diluent should be varied each time, or heat should be avoided, or some other previously used manipulation altered.

An *essential* condition in using this method of examination is to make each pair of tests (*A* and *B*) *under equal conditions* (the only difference being a few drops of turp. in *B*) and *at the same time.*

When purchasing oils to be used as stimulators, samples of them should first be examined to ascertain their power, since commercial lots vary.

As an example of the practical application of the method, we select, from Dr. Hager's work, a portion of the section treating of *Oil of Lavender.*

I. *Oil of Lavender, finest* (old).—Mixture of oil and guaiac heated on water-bath to 140° C. *A* remains colorless, *B* becomes blue. On cooling, *A* is light-blue, *B* dark-blue. After addition of chloroform, *A* is light-blue, *B* dark violet-blue. After an hour same color. On heating now again, *A* becomes yellowish, *B* very dark blue. This latter appearance is of importance, as it seems to show that oil of turpentine is absent, although the previous reaction appeared to show its presence. Hence the test is varied thus:

Guaiac, oil, and benzol are put into the test-tubes *cold.* After 5 minutes *B* acquires a blue tint, while *A* is yellow; in 15 minutes, *A* is yellow, *B* dark blue; after 15 minutes, a faint violet tint appears also in *A*, becoming gradually pale-blue, and in about 45 minutes dark-blue.

Comparing these results with those obtained with the next sample (and with several others described in detail by the author, but omitted here), the present sample probably contains a small quantity (not over 3 per cent) of oil of turpentine.

II. *Oleum Lavandulæ* (old). Guaiac agitated with oil, result a turbid mixture. On boiling, *A* is yellowish, *B* green. After adding chloroform, *A* and *B* are yellow; after boiling, *A* and *B* are yellow, the latter a little deeper. After adding 10 drops abs. alcohol and boiling, *A* and *B* yellow and clear. Set aside for 7 hours: *A* yellow, *B* brownish-yellow. Again boiled, *A* remains yellow, *B* acquires violet tint, becoming dark-violet. This oil, therefore, is "stimulatory."

Reaction varied: Guaiac boiled with 15 drops abs. alcohol, oil, and benzol (1 C.c. each): *A* and *B* yellow. After adding 2 drops oil of citronella and heating to boiling, *A* yellow, *B* dark-blue, the tints being persistent.

These differences of color, in both of the above reactions, prove the total absence of oil of turpentine.

III. *Oleum Lavandulæ* (old). Guaiac, oil, and chloroform, heated to 158° F., acquire a green tint. Set aside for 15 hours, *A* contains a yellow layer surmounted by a small (1.5 Mm. thick) bluish layer. In *B* the bluish layer is twice as high, the lower layer is yellow. On boiling, both *A* and *B* become dark-violet. Variations:

(*a*) Guaiac and oil set in the water-bath: at 185°–194° F., a greenish-yellow color; *A* and *B* are clear. After adding benzol, *A* is turbid, *B* clear and greenish; at 158°–167° F., both are bluish-violet, *A* is turbid, *B* clear; on boiling, *A* and *B* are dark-blue.

Oil of turpentine is therefore present. To make sure, the reaction is varied again in several ways:

(*b*) Guaiac, oil, and benzol are put into the test-tube (guaiac settling firmly on bottom). Heating to 140° F. produces bluish tint. Set aside for 15 hours, *A* and *B* are alike, each containing two layers, the upper one bluish, the lower yellow. On boiling, *A* is violet, with yellowish tint, *B* more bluish-violet.

(*c*) Guaiac boiled with 10 drops abs. alcohol; mixed with oil, amylic alcohol, and 3 drops of oil citronella; then set aside. After an hour, both *A* and *B* equally greenish with violet tint.

(*d*) Guaiac and 15 drops abs. alcohol boiled; mixed with oil, benzol, and 5 drops of oil citronella. *A* and *B* yellow, but *B* immmediately acquires a violet tint and *A* follows in half a minute, both being dark-violet after 4 minutes.

This concurrent behavior in the four sets of reactions reveals, beyond a doubt, the presence of at least 10 per cent of oil of turpentine.

For further details regarding the application of the method we must refer the reader to the original.

Volatility of Iodoform.—Mr. D. B. Dott says that iodoform loses 0.016 per cent per hour when exposed to the air in a thin layer at ordinary temperatures. With the heat of a water-bath it loses 6.70 per cent in the hour.

A NEW SIPHON.

THE siphon here described has been devised by Bode and Wimpf for drawing acids, caustic liquids, etc. It has the advantage that it may be started by merely dipping the short end into the liquid and blowing into the opening at *h*. As will be seen from the cut, the shorter leg is inclosed within a wider tube, the lower end of which contains a small ball (*b*) which serves as stopper.

To start the siphon, the short leg is immersed in the liquid, and presently the latter will have risen inside to the same level at which it is in the vessel. The mouth is then applied to the orifice at *h*, and air blown in. The pressure of air on the column of liquid in the tube *c* will cause the ball *b* to fall into the orifice and to be firmly retained there. At the same time, the pressure will be communicated to the continuation of the column of liquid in the tube *d*, and liquid will begin to flow from the orifice *f*. Were the blowing of air into *h* continued, the effect would simply be that nearly all the liquid contained in the siphon would be blown out through *f*. It is, therefore, necessary to stop blowing as soon as the liquid begins to run from the long leg in a stream. The moment that no more air is blown in, and the pressure on the ball thereby removed, the latter will be sucked upwards and allow the liquid contained in the vessel to ascend the tube *d*.

If it is desired to interrupt the flow, without taking the siphon out of the liquid, it is only necessary to blow strongly into the opening *h* until the siphon is emptied. It may be started again as before.

The opening at *h* should be kept closed, except when air is to be blown in.

The lower figure shows the manner in which the siphon may be made a permanent attachment to vessels used for storing caustic or other liquids.

[To prevent accidents from a regurgitation of the liquid through the opening *h*, which, under peculiar conditions, may sometimes happen, it will be better to connect the orifice *h* by a stout rubber-tube with an empty bottle, and to blow air into the latter. Should any liquid accidentally regurgitate, it will be projected into the bottle instead of into the mouth. It is true that the form of apparatus here described is less liable to cause such an accident than most others, but the precaution we have given can do no harm. In the case of such siphons as are fixed *air-tight* into the neck of the vessel to be emptied, the risk of regurgitation is greatly augmented, and the interposition of an empty bottle highly to be recommended.—ED. AM. DRUGG.]

APPARATUS FOR GENERATING OXYGEN GAS.

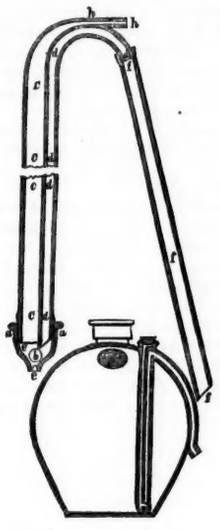
THE apparatus here described has been designed by Dr. Robert Muencke, of Berlin. It consists of an iron tube *A*, twelve inches long and one and a half inches internal diameter, closed at one end and open at the other. Near the closed end a smaller tube *b*, internal diameter five-sixteenths of an inch, forms the exit tube of the developed gas. The open end, after the interior has been filled half full of powdered chlorate of potassium, is closed by means of a cap and clamp. The inclosed salt is then evenly divided by shaking or tapping the tube, and heat applied by means of a sliding burner, beginning at the end closed by the cap.

This form of apparatus permits the employment of chlorate of potassium unmixed with other substances. It also enables the operator to interrupt the generation of gas at will, and to start it again at any moment.—*Chem. Zeit.*, No. 63.

Sublimated Serum and Albumen.

IN a paper by Mr. H. W. Jones relating his experience in using serum of horse-blood in preparing antiseptic gauze, and its comparison with an egg-albumen of corresponding specific gravity, the following interesting points are noted:

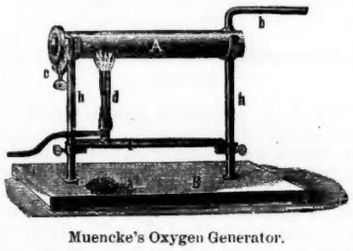
"The difference between the solubility of mercuric albuminate in horse-blood serum and in solution of egg-albumen depends probably on the different mode of combination of the albuminous matter with an alkali. By the addition of a small portion of



Bode & Wimpf's siphon.

potassium hydrate to a solution of egg-albumen, neutral potassium albuminate appears as a gelatinous precipitate, which dissolves in the excess of albumen on shaking, and a solution so prepared closely resembles serum of horse-blood in its reactions.

"A curious point in relation to the subject is the slowness with which mercuric albuminate precipitates from a solution of egg-albumen in presence of an excess of the latter, and shows that much reliance cannot be placed on albumen when used as an antidote



Muencke's Oxygen Generator.

in mercurial poisoning, beyond the fact of its acting as an emollient. To test this point, 100 C.c. was treated with 1 grain of mercuric chloride, and allowed to stand for fifteen minutes. It was then filtered rapidly under pressure. The precipitate, when dried, only weighed 1.84 gramme, and the clear filtrate ultimately deposited very considerably.

"Although a difference obviously exists between solution of albumen and serum of horse-blood, in the opinion of the writer this would not practically affect the substitution of one for the other, since the intention is to produce albuminate of mercury, which, *per se*, is soluble to a certain extent in all albuminous and saline fluids.

"For a convenient solution, one having a specific gravity of 1.020 is recommended, since it is strong enough for the preparation of the usual strength of gauze (1 to 100), and contains, in round numbers, seven per cent of albumen. The same solution may also be used for the preparation of dusting-powder or ointment. Unless mixed with starch and air-dried, the albuminate forms a horny mass, which cannot be finely powdered. An ointment may be made by mixing the moist precipitate with simple ointment, or, better, a glycerite formed by using Glycerinum amyli in place of a fatty base. In any case, in preparing an ointment, sufficient albumen solution or serum must be used to completely combine with the mercuric chloride, and some means adopted for separating the precipitate from the watery portion."—*Chem. Drugg.*

Natural Camphor-Oil.

MR. JOHN MOSS reported a number of interesting facts respecting this substance, at the Brit. Pharm. Conference. The natural camphor-oil of Japan is imported in cases containing two square tins, like castor-oil tins, each holding forty pounds. Examination showed that the commercial oil is not always free from camphor gum. Specimens of the oil vary in color from colorless to black, the most common being pale straw-color. The specific gravity varies from .898 in the colorless to .990 in the very dark, and no two consecutive tins have the same specific gravity. These variations are probably due to a hap-hazard way of running it off into the vessels in which it is shipped, and the variable proportion of camphor it contains is similarly due to the different temperatures at which it is separated—*Chem. and Drugg.*

Spurious Cubebs.

MESSRS. W. ELBORNE and H. Wilson lately undertook to discover the nature of the piperaceous fruit which has been found by Mr. Holmes and Mr. Kirby to be mixed with some samples of cubebs, and which produced bad effects, reported in the *Lancet* by Mr. B. Shillitoe. *Piper crassifus* has been determined to be the adulterant, and a further examination demonstrated that it contained no tannin, but did contain an essential oil, resin, and a very bitter glucoside. Which of the latter cause the harmful effects has not yet been determined.—*Chem. and Drugg.*

Carbolic Acid as a Test for Nitrates.

ACCORDING to Hager, when a crystal of carbolic acid is placed into pure concentrated sulphuric acid, it at first floats, and ultimately dissolves without coloring the liquid. If the sulphuric acid contains a trace of nitric or nitrous acid, a coloration takes place which is red, brown, or green, according to the degree of contamination, but is always dark. If the sulphuric acid contains water, it is necessary to heat it to between 50° and 70° C.—*Pharm. Jour.*

Triethylamine, $N(C_2H_5)_3$, resembles the sulphate of sodium, sulphate of calcium, and caustic lime in its greater solubility in cold than in hot water. Its sensitiveness in this particular is so great that Dr. Guthrie proposes (*Lancet*, July 19th, 1885) to utilize this property as a means of taking the temperature of the human body. For this purpose, he suggests solutions, varying in strength from five to twelve per cent by weight in water, contained in hermetically sealed glass-bulbs. Upon being heated, these solutions become turbid, those containing most alkali requiring least heat. A ten-per-cent solution becomes turbid at 72° F., an eight-per-cent solution at 76° F., and a four-per-cent solution at about 107.6° F., so that these and intermediate proportions cover the limits of the range of temperature of the human body.—*Pharm. Jour.*

ESTIMATION OF NITROGEN IN ORGANIC SUBSTANCES.

As we have shown in several previous articles, the exact estimation of nitrogen in organic substances, which had previously been possible only by the more tedious operation of ignition with soda-lime, has been made one of the most simple chemical operations through Kjeldahl. All chemists who have carefully tested the process are agreed that it should supersede all other processes.

O. Reitmair and A. Stutzer, of Bonn, who have to make large numbers of nitrogen determinations, have now also adopted the method exclusively, and have, moreover, pointed out the best arrangements for carrrying out a number of assays at one and the same time. We will give below the salient points of their paper.

The organic substance is decomposed in small glass flasks made of well annealed potash glass. For dry substances, the authors recommend flasks of 200 C.c. (7 fl. oz.) capacity. For liquid, such as milk, beer, wine, blood, etc., somewhat larger ones, of 250-300 C.c. (9 to 10 fl. oz.).

The weighed substance (not over 1 Gm., and if as much as about 10% of nitrogen is present, not more than 0.1 or 0.2 Gm.) having been put into the flask, about 0.7 Gm. of oxide of mercury (taken by guess) is added, which aids the decomposition, according to Wilfarth, but does not take part in the reaction—and then 20 C.c. of pure concentrated sulphuric acid. In the case of very fatty substances, a small piece of pure paraffin is added, which will effectually prevent excessive foaming.

Fuming sulphuric acid is *never* free from nitrogen, and therefore cannot be used here.

As recommended by Kreusler, the flask is closed with a loose round hollow glass-stopper drawn out to a point below. These hollow stoppers may be easily made out of a suitable piece of glass-tubing. The flask or flasks are then placed in a slanting position upon wire-gauze, being supported by a wire-frame upon which the necks rest. A thick layer of sand is placed on the table underneath, so that if one of the flasks should break, no serious damage would be done by the hot acid. There should be a good draft over the flasks.

The authors do *not* recommend to use a sand-bath, since the flasks, when heated upon sand, will soon be affected with fine scratches, and rapidly become useless. An ordinary Bunsen burner with wire-gauze cap (to prevent the flame from striking back) may be used.

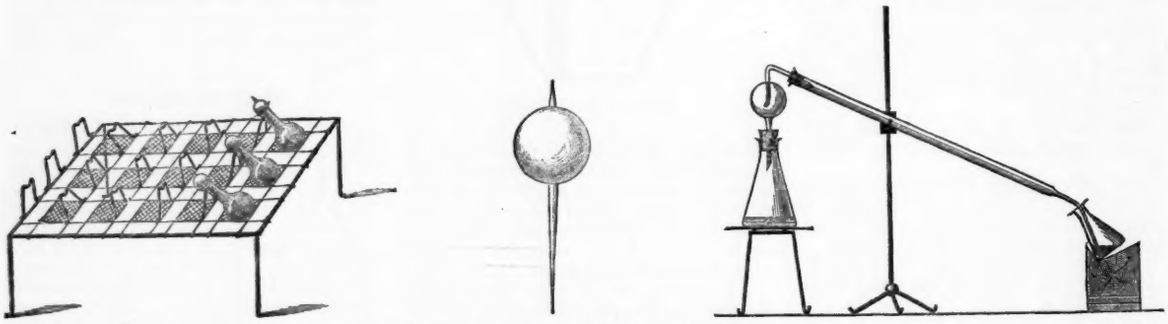
At first a very gentle heat is applied; afterwards it is raised gradually to boiling and kept so until the liquid has become quite colorless. When cold, the contents are cautiously diluted with a copious amount of water, whereby any crystallized mercurial salt present is completely dissolved. The liquid is now rinsed into the distilling flask 120 to 140 C.c. of a soda solution of 30-32° B. added, and then 25 Gm. of a solution of sulphide of potassium (containing 40 Gm. in 1 liter); this is added for the purposes of precipitating the mercury as sulphide.

The preparation of the soda solution at first gave the authors some difficulty, as the ordinary soda is too impure and the chemically pure alkali too expensive. They finally found that E. Merck, of Darmstadt, furnished a sufficiently pure article, 100 kilos of which cost 110 mark, and this is the article they used.

During the heating of the organic substance with the sulphuric acid, the nitrogen of the former is converted into sulphate of ammonium, none of which is lost or escapes during the heating. All that is now required is to decompose this salt by an alkali (the soda solution above mentioned) and to distil the ammonia over into a known quantity of standard sulphuric acid, where it is finally determined by finding the quantity of sulphuric acid left unsaturated.

The authors employ for the distillation so-called Erlenmeyer flasks (Fig. 2), and prevent the spattering of any of the contents of the flask into the condensing tube, by the arrangement shown in the cut. The condenser is *not* to be cooled.

It consists of a tube, ¾ inch wide and 30 inch long, ending in a narrow bent tube which *dips* into the sulphuric acid contained in the receiver. The capacity of the whole tube is such that the contents of the beaker could never be aspirated back into the flask.—*Rep. d. Anal. Chem.*, 1885, No. 14.



Reitmair & Stutzer's apparatus for assaying nitrogen.

A Permanent Solution of Ferrous Iodide.

MR. A. E. ROBINSON read a paper at the British Pharmaceutical Conference in which he recommended a mode of forming a permanent solution of ferrous iodide.

1. A solution of ferrous iodide eight times the strength of the official syrup could be almost indefinitely preserved in a stoppered bottle, occasionally opened for purposes of sale, etc., by the addition of aqueous hypophosphorous acid, equal in amount to only 1 per cent of the anhydrous acid H_3PO_2.

2. The same solution containing 1 per cent of H_3PO_2, if freely exposed to the air in a bottle, would keep perfectly for two months.

3. If on continued exposure the solution became decomposed, the further addition of a few minims of acid would restore it to its original grass-green color, and make a perfectly clear solution free from all deposit; this could be again repeated after further exposure resulting in decomposition.

The following formula was submitted as the outcome of these experiments:—

Iodine	1,804 grains
Iron wire	2 oz.
Distilled water	6 fl. oz.
Hypophosphorous acid (containing 20 per cent of H_3PO_2)	3 fl. drachms

Digest the iodine, iron wire, and water at a gentle heat until combination is complete, filter into the hypophosphorous acid, and add sufficient distilled water to make 8 fl. oz.

This will contain in each drachm 34.4 grains of ferrous iodide, FI_2, and, when added to simple syrup in the proportion of 1 part to 7 parts by measure, will form syrupus ferri iodidi of the Pharmacopœia strength as regards ferrous iodide.

N.B.—Care should be taken to ensure the purity of the hypophosphorous acid,* as much of that prepared by the usual process, viz., by decomposition of hypophosphite of calcium with oxalic acid, contains oxalic acid as an impurity. This formula, it was added, is merely a suggestion; the addition, however infinitesimal, should first be made known and recognized, and it should remain with the medical profession either to condemn or condone its usage.

The application of the acid to the preservation of other substances naturally prone to decomposition was also examined and found to be very effectual. With syrupus acid. hydriodic., ammonii iodidum, pil. ferri iodidi, ung. potas. iodid., and solutions of the protosalts of iron it is of great service. The decomposition of a solution of sulphate of iron is almost entirely prevented by its addition; this fact will doubtless be of service in photographic work, where solutions of ferrous sulphate and oxalate are in constant requisition.—*Chem. and Druggist.*

Ginger Pop.

TAKE 5½ gallons water, ¾ pound ginger root bruised, ½ ounce tartaric acid, 2¼ pounds white sugar, white of 3 eggs well beaten, 1 small teaspoonful lemon oil, 1 gill yeast; boil the root for 30 minutes in 1 gallon of the water, strain off, and put the oil in while hot; mix. Make over night; in the morning skim and bottle, keeping out sediment.

Paraffin-Stoppers.

MR. KIRSTER, a German pharmacist, has recommended, in the *Pharmaceutische Zeitung*, the use of paraffin in place of corks or other stoppers for the hermetic sealing of bottles containing liquids which are prone to ferment or otherwise deteriorate by coming in contact with the air. This, he says, is particularly applicable to syrups or saccharine juices of all kinds. They are poured, while hot, into perfectly dry bottles, which are filled nearly up to the lip. They are then allowed to stand at rest until cold, during which time all air bubbles will rise to the surface. Finally, a small quantity of melted paraffin is poured over the top, where it forms a firm solid coat on cooling, about the tenth of an inch thick. Such a paraffin stopper is easily removed when the contents of the bottle are required for use, and by collecting the paraffin it can be used again.

*[For the preparation of pure hypophosphorous acid, see our remarks in NEW REMEDIES for 1883, page 281.—ED. AM. DRUGGIST.]

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EDITORIAL.

The International Pharmacopœia.

ONE of the most important features of the late International Pharmaceutical Congress was the report of the International Pharmacopœia Committee and the discussions following the same. Since many of our readers may not remember the circumstances under which this committee was appointed, we shall briefly relate them.

Efforts to prepare an International Pharmacopœia have been made at every Pharmaceutical Congress since 1867, but, up to the present, no practical result had been obtained, though one draft was offered in 1874, which was, however, never completed.

At the last Congress, held at London in 1881, it was resolved to appoint a Committe of two Representatives from every country,* to which should be entrusted the task of elaborating such a work. A portion of the Committee was elected by the Congress from among the members present, and the remainder were elected or appointed afterward by their respective countries. The Committee is composed of the following (with personal titles omitted):

A. V. Waldheim (Austria), *President.* A. Petit (France), J. Martenson (Russia), *Vice-Presidents.* R. Godefroy (Austria), *Secretary.*

Members:

Austria: A. V. Waldheim; J. Dittrich. *Belgium:* N. Gille; L. Cornelis. *Denmark:* G. Lotze; P. Madsen. *England:* J. Redwood; P. Squire. *France:* A. Petit; C. Méhu. *Germany:* C. Brunnengräber; C. Schacht. *Greece:* F. X. Landerer. *Hungary:* G. Jarmay; R. Egressi. *Ireland:* C. Tichborne; H. Draper. *Italy:* N. Sinimberghi; D. Vitale. *Netherlands:* Dr. Ankersmith; W. Stöder. *Norway:* G. Hansen; W. Walther. *Portugal:* J. J. Alvez; J. U. de Veiga. *Russia:* J. Martenson; E. Rennard. *Spain:* (two gentlemen whose names were illegible in the notice sent to the President). *Sweden:* W. Sebardt; L. Stahre. *United States:* J. M. Maisch; Ch. Rice.

After the committee had been completed, the President prepared a rough list of titles of drugs, chemicals and preparations, such as he thought might form the *basis* of an International Pharmacopœia, and sent them to the members of the Committee for criticism. On the basis of the notes thus submitted, he finally elaborated a draft which he presented at the late Congress.

It must be confessed that the appearance of this draft was a perfect surprise to the American members of the committee and probably to many others, who had no intimation whatever that anything of the kind was contemplated. It had been expected that, when the President had received all the criticisms of his draft from the different countries, a new circular would be issued combining all these documents, so that each member would have a better chance of surveying the whole draft and criticising the same. In our opinion, this would have expedited the object materially, as each member of the committee attending the congress at Brussels would have known all about the whole subject. Instead of this, Baron von Waldheim thought it advisable to elaborate, from the first notes received from the members, and with the aid of and reference to the different pharmacopœias,* a complete draft, to be submitted to the congress. We cannot blame Mr. von Waldheim for doing so, as he probably had sufficient reasons. On the contrary, we acknowledge that he has rendered very valuable services to the cause of pharmacopœial uniformity, by his laborious compilation.

It was, of course, not to be expected that this draft, unexamined and uncriticised by the other members, would be at once adopted *en bloc.* The only practical thing to do was to refer it back to the committee for discussion and further elaboration, and this was, in fact, done.

To give a complete reprint or translation of the draft in this paper would be at the present time unprofitable. We shall content ourselves with an account of the more salient features.

Right here we want to express our conviction that an international pharmacopœia, in the sense originally intended, is an impossibility, and impractical—at least for many years to come.

At one time, it was believed that all special national pharmacopœias could be done away with, and that *one* international code could take their place. This view was held by some very prominent organizers of the first Congresses, as we know from personal acquaintance. The majority of those, however, who took any interest in the matter contended themselves with the project of getting up an international work which should be official and recognized in all countries, *alongside* of the national pharmacopœia, and the introduction of which might gradually bring about greater uniformity in similar preparations of different countries. We must confess that we see more drawbacks in the existence, side by side, of two pharmacopœias than advantages. While we cannot, however, reconcile ourselves, for the present, to the first feature, we thoroughly approve of the second, viz., the bringing about international uniformity, and believe this to be by far the more important and really practical one. An international pharmacopœia should, *in the first place*, aim at establishing general norms, according to which the pharmacopœias of the different countries may be constructed, or to which they should gradually—yes, even very gradually—be approached. *In the second place*, an agreement should be arrived at, regarding the identity, quality, and strength of all powerful crude drugs and of such chemicals only as are not fully defined by the mere name; likewise regarding the strength of the different classes of pharmaceutical preparations (if this be possible); and particularly regarding the strength of the preparations of potent drugs. And lastly, some uniform rules regulating the nomenclature should be established.

That a *unaminous* vote on all these points will ever be reached is highly improbable. However, if a gradual approach to uniformity is brought about, without depriving each pharmacopœia of its individuality (since each one ought to be adapted to its own special people and climate), a great advantage will have been gained. And to this end we are willing and anxious to contribute.

We shall now turn to the draft proposed by Baron von Waldheim, and first say a few words about its *nomenclature.* The author had much difficulty in selecting titles which might be supposed to be acceptable to all countries. The principal difficulty was presented by chemicals, for which three kinds of nomenclature are in vogue, in different pharmacopœias, namely: (*a*) the new scientific chemical nomenclature (example: *Ferrum sulphuricum*); (*b*) the English and American system (example: *Ferri sulphas*); (*c*) the system of Berzelius (example: Sulphas ferrosus). As it was deemed impracticable to give all the names of one and the same preparation in the different pharmacopœias, the author usually selected three, one from each of the above systems, and placed that which he considered in chief use first. He also added such synonyms as he considered necessary.

As it often happens that certain articles (preparations, etc.) contained in this draft have a title coinciding with that contained in one or another pharmacopœia, while the article or preparation *differs* in strength, it would become necessary, if this draft is finally adopted, to alter the strength of these articles in the several pharmacopœias, so as to render the preparation uniform with that of the international pharmacopœia. Or, if this is not done, the article understood by the international pharmacopœia should, at least, never be dispensed without it is clearly understood that it is actually intended.

Chemicals.—In our opinion there is no necessity whatever of including in an internationai pharmacopœia any chemicals of known and definite composition, such as the following, which

*Ireland and Hungary are separately represented.

*All the latest editions were used, except in the case of the Spanish, the new edition of which, of the year 1884, has remained almost entirely unnoticed in pharmaceutical literature.

are enumerated (with description and tests), in Mr. v. Waldheim's draft.*

Acidum arseniosum, — carbolicum, — chromicum, — salicylicum; Antimonii chloridum, — et Potassii tartras, — oxidum; Apomorphiæ hydrochloras; Argenti nitras (cryst.); Atropina; Atropinæ sulphas, — valerianas; Bismuthi subnitras; Bromum; Chloral; Codeina; Colchicina; Coniina; Creasotum; Cuprum ammoniatum; Ferri chloridum (cryst.); Hydrargyri chloridum corrosivum, — chloridum mite, — iodidum rubrum, — iodidum viride, — oxidum flavum, — oxidum rubrum; Iodoformum; Iodum; Morphina; Morphinæ acetas, — hydrochloras, — sulphas; Oleum sabinæ, — sinapis æthereum, — tiglii; Phosphorus; Plumbi acetas, — iodidum; Potassii bromidum,—iodidum; Santoninum; Sodii arsenias (cryst.); Strychnina; Strychninæ nitras, — sulphas; Sulphuris iodidum; Zinci acetas, — chloridum, — oxidum, — sulphas, — valerianas.

It is generally understood and provided for by the different pharmacopœias that all these, and many more definite chemicals should be of the highest degree of purity practically attainable. Hundreds of other chemical substances might be mentioned which would deserve to be included in the above list with equal justice. Is it likely that the chloral dispensed in Austria or in the Argentine Republic, or in Japan, will materially differ in "strength" from that dispensed elsewhere? Or, is it likely that a special chloral will be kept in stock, which may comply with some extra-refined requirement demanded by an international pharmacopœia?

On the other hand, it is quite proper, and even necessary, to enumerate and define such substances as the following, which are also contained in the draft:

Acida (mineral, liquid); Acidum benzoicum; Aconitina (German, English, and the cryst. French); Æther; Alcohol (90% and 70%); Ammonia (water); Antimonii sulphidum purificatum, — sulphidum rubrum; Antimonium sulphuratum; Argenti nitras fusus; Argenti nitras mitigatus fusus; Chloroformum; Digitalina (German, French, and cryst.); Hydrargyrum ammoniatum; Potassa; Potassii cyanidum; Veratrina.

But this list should be extended much further. It should include all potent chemicals recognized by the different pharmacopœias and known to be in use. For instance, if *potassa* is enumerated and defined, why should not *soda* be treated likewise?

Vegetable Drugs.—The following are contained in the draft:

Aconitum (Napellus; leaves and roots; we fail to see the utility of mentioning, specially, such varieties as "A. tauricum vel neomontanum Wulf."). Aloe (only Cape and Barbadoes are recognized in the description; Aloe socotrina is given as one of the sources). Belladonna (leaves and root). Cannabis Indica. Cinchona (1. Calisaya required to contain at least 2% quinine; 2. Pale bark: Loxa and Huanaco, 9 species (some of them of doubtful value or existence), required to contain at least 1% quinine; 3. Red bark, with at least 2.5% quinine, which we regard as too little. (Pale bark should have been omitted entirely.) Colchicum (corm. and seed). Colocynthis. Conium (herb and "dried *ripe*" fruit, for which the "unripe" should have been named). Croton Tiglium (seed). Digitalis (leaves). Ergota. Filix mas (American species also recognized). Gratiola. Helleborus niger. Hyoscyamus (leaves and seeds). Ignatia. Ipecacuanha (the author of the name Uragoga Ipec. is H. Baillon, not "H. Brn"). Jalapa (there are several errors in the nomenclature; Exogenium is wrong, should be Exogonium). Lactuca virosa. Laurocerasus, Lobelia. Nicotiana. Nux vomica. Papaver. Physostigma. Pulsatilla. Rhus Toxicodendron. Sabina. Scammonium (the author follows this heading by the misleading synonym "Scammonia;" next follows the name of the plant: *Convolvulus Scammonium* (should be Scammonia). Scilla. Stramonium (leaves and seeds). Veratrum album and viride.

Gums, Resins, and Gum-resins derived from Vegetable Drugs.—Cambogia. Euphorbium. Opium ("10 parts, dried with a gentle heat, should contain not more than 8–10 parts of water, and at least 10 parts of pure morphine." This passage reads thus in the original: "*Opii 100 partes, leni calore siccatæ ne plus quam 8–10 partes Aquæ et ad minimum 10 partes Morphini puri contineant.*" Does this mean that *fresh* opium should lose by gentle drying not more than 8–10 parts of water, or that 100 parts opium, after being gently dried, may *still* contain 8–10 parts of water?). Resina Jalapæ. Resina Podophylli.

Animal Drugs.—Cantharis.

The pharmaceutical portion of the draft and other criticisms, are reserved for a future comment.

* We quote the titles in the nomenclature familiar to American pharmacists.

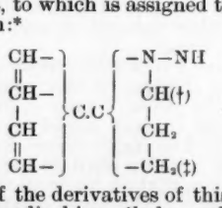
Antipyrin.

It is reported that the consumption of this new antipyretic has already assumed undreamed-of proportions, and that it is gradually and surely displacing quinine as a remedy for reducing high temperature. We have received a number of inquiries during the past six weeks, partly from pharmacists, and partly from physicians, asking for further information regarding the new drug. In order to satisfy these inquirers, the chemical and medical history of the drugs, so far as available at present, is given in a condensed form in the following, which is chiefly based upon our previous notes on the subject (Am. Drugg., 1884, 239, *et al. l.*) and upon the *Jahresbericht über die Fortschritte der Pharmakotherapie* von Dr. Ed. Rud. Kobert, 1885, p. 312 sqq.

Regarding the classification of fever-remedies, this author correctly remarks that, at the present time, it is no longer correct to class all fever-remedies together. Such as have a specific curative effects in intermittents must be grouped separately, and may form the *quinine group*. The others, which have no effect upon malarial fevers, but merely lower temperature, form the second or *antipyrin group*.

Chemistry of Antipyrin.

Dr. Ludwig Knorr, of the University of Erlangen, discovered a new series of bodies, having, as a common origin, a hypothetical base, called by the author *chinizin*, to which is assigned the constitution:*



One of the derivatives of this hypothetical radical is *methyl-oxy-chinizin*, which differs from chinizin in this, that the hydrogen atom distinguished in the formula by the sign † is replaced by methyl (CH_3), and the two hydrogen atoms distinguished by the sign ‡, replaced by one molecule of oxygen.

$C_9H_{10}N_2$ chinizin becomes $C_{10}H_{10}N_2O$ methyl-oxy-chinizin.

If this methyl-oxy-chinizin is heated with an excess of phenyl-hydrazin to 170° C., or to boiling, two molecules of it unite with elimination of two atoms of hydrogen, and form *di-methyl-oxy-chinizin*, or *antipyrin*.

$$\left.\begin{matrix}C_{10}H_{10}N_2O\\C_{10}H_{10}N_2O\end{matrix}\right\} = C_{20}H_{18}N_4O_2 + H_2$$

2 mol. of chinizin — antipyrin — hydrogen.

The name antipyrin was chosen because its proper chemical name is too uncouth for ordinary conversation.

The aqueous solution of antipyrin gives two characteristic reactions. Ferric chloride colors it deep-red (like most chinizin derivatives). Nitrous acid produces in its dilute solution a bluish-green tint; in a concentrated solution it causes the separation of green crystals. The latter reaction is still visible in dilutions of 1 in 10,000; the ferric chloride reaction in dilutions of 1 in 100,000.

According to Maragliano, the best reagent for antipyrin is iodized iodide of potassium (a solution of iodine in iodide of potassium), which yields a red color in solutions containing as little as 1 in 100,000. The drug may thus be recognized, even in the urine, if it be acidulated with sulphuric acid. The resulting tint is reddish-brown.

Physiological Effects.—Antipyrin exerts no influence on the spleen. In healthy man it lowers the temperature of the body only a few tenths of a degree, never below the lowest limit of the normal temperature. The excretion of nitrogen by the urine is diminished in healthy man as well as during fever. After large doses, a considerable increase of the compound sulphuric acids is noticeable in the urine, amounting sometimes to one-half of the total acid. It is, therefore, probable that antipyrin appears in the urine as antipyrin-sulphuric acid. Free antipyrin may be distilled over with steam. But no antipyrin can be detected in the distillate from urine after taking it. If, however, the copulated sulphuric acids in the urine be split up by boiling with hydrochloric acid, and the excess of acid then be neutralized with soda, antipyrin will readily pass over into the distillate. When larger quantities of the drug are given, it may be detected in the urine itself without distillation (*Fr. Müller*). After internal administration, it generally appears in the urine after three hours; the largest amount is passed during the fourth, but it is not completely eliminated after 24, or even 36 hours (*Maragliano; J. J. Hage*). It cannot be detected in the saliva or the perspiration (*J. J. Hage*).

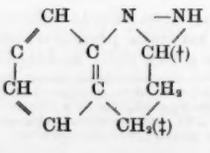
Therapeutic Effect.—Antipyrin, administered to adults in 3 doses, given one hour apart, of 1.66 to 2 Gm. (25 to 30 grains) each, promptly subdues every kind of fever, generally without collateral effects (*W. Filehne*).

To children it may be administered in the same manner. The proper dose for them is about as many decigrammes (1½ grains) as the child's age amounts to (*Penzoldt; E. Sartorius*).

In phthisical cases, the remedy acts very promptly and uniformly, and is far ahead of any other antipyretic so far known. The relief afforded in these cases is quite remarkable; oppression and sensation of heat in the head, and gastric discomfort disappear entirely. No secondary effects, such as noise in the ears, dizziness, nausea, etc., make their appearance.

By continued use patients appear to become somewhat habituated to it. As much as 5 Gms. (75 grains) per day

* Which may also be written thus (see Am. Dr., 1884 239):



are easily borne even by the very sick. When the temperature falls, sweating occurs, but on rising again, this symptom is absent. Even the first sweating may be prevented by administering *agaricin* at the same time as antipyrin (*Meissen; L. v. Hoffer*, etc.).

The quantity of agaricin, recommended by *Carl v. Norden* for this purpose is 5 milligrammes (ab. ½ grain) once or twice hypodermically. Atropine may also be used.

According to *E. Rapin*, the remedy always causes more or less nausea. *A. Gier* observed it to produce vomiting only sometimes in children, never in the case of adults. Many other observers state that nausea is but rarely produced.

Another disease in which antipyrin is of the greatest service is typhus. In inflammatory rheumatism it has also been found to be of great service in keeping the temperature down. In one case, where 17 Gm. (270 grains) were administered in the course of 40 hours, the temperature remained almost constantly at the normal point; and the general condition of the patient was much improved during this period. But it has no curative effect upon the disease (*Alexander*). *Lenhartz*, however, obtained such favorable effects that he regards antipyrin even as a better specific in this disease than salicylic acid. Nearly all authorities agree that it is useless as a remedy in intermittents.

Antipyrin produces not unfrequently a peculiar exanthematous eruption, generally resembling measles (*Alexander; P. Ernst*); sometimes resembling scarlatina (*E. Bielschowsky*) or urticaria (*Alexander*). This eruption is sometimes accompanied by fever (*A. Cahn*).

Mode of Administration.

The best form is in solution, to be given *per os*. It may either be dissolved in plain or sweetened water, or combined w ith some flavoring ingredient. A good vehicle is syrup of raspberries (Syrupus Rubi Idæi), syrup of lemon, simple elixir, compound elixir of taraxacum, or *wine*. If the latter is used, each dose should be dissolved in it immediately before being administered, as the drug causes the precipitation of the coloring matter of the wine on standing.

Hypodermic injections have been tried, but have been found *quite painful*. Quite recently, however, Dr. Westbrook has reported two cases of sunstroke successfully treated by hypodermic injections of antipyrin, in doses of twenty to thirty grains, in form of a fifty per cent solution, by which but little irritation was produced.

It may, however, be administered per rectum with good success.

IN Van Wyck *vs.* Harowitz, New York Supreme Court, Special Term, 28 Daily Reg., 305, the question as to the right of a party to use another name upon his business cards, etc., by saying "late with," etc., was discussed and the court rendered an opinion that the motion to continue an injunction against such use of name must be granted because—

"First. The defendant is, without authority, using the plaintiff's name, which is the use of another's property for his own benefit, and to the injury of its owner.

"Second. He is attempting to transfer to himself a part of the reputation of the store and business of the plaintiff which also belongs to the plaintiff as really and as truly as his name or his personal property of which he is the actual owner.

"Third. The mode and manner of the use by the defendant of the name of the plaintiff are such as oftentimes to deceive, and because liable to deceive, and thus benefit the defendant at the expense of the plaintiff, such use must be held to be unlawful.

THE Committee on Adulterations and Deteriorations of the Pennsylvania Pharm. Assoc., at its last meeting, remarked in the course of its report:

"The bonanzas of adulteration and deterioration were found, not in the shops of our regular apothecaries, but in the stocks of physicians who supply their own medicines. We found rancid and decomposed ointments; fluid extracts which were hardly respectable tinctures; fermented syrups; sweet spirit of nitre, acid, deficient in alcohol and containing scarcely a trace of nitric ether; Tr. Opii Camph., prepared "strictly according to the U. S. P." by the physician himself, in which the undissolved benzoic acid scintillated

beautifully, and the oil of aniseseed was displayed in tiny globules; alcohol testing sixty-five per-cent spirit, and a choice display of sample proprietary articles from so-called manufacturing chemists, on which were displayed not only directions and doses, but also the diseases for which they were recommended kindly mentioned. It is but just to say that these doctors had a poor opinion of the action of medicines, and doubted the truthfulness of their properties as given in the books."

AMONG the valuable recent Government publications is a catalogue made by Dr. H. Carrington Bolton, of New York, and issued by the Smithsonian Institution, embracing a list of all the scientific and technical periodicals that have appeared since the origin of this class of literature in 1728. It does not include medical periodicals (probably because these are already the subject of the very thorough catalogue of the library of the Surgeon General's Office), nor the transactions and pro ceedings of societies mentioned in the list of scientific serials published in 1879.

THE sixth volume of the Index Catalogue of the Library of the Surgeon General's Office, appeared on the 20th of June, 1885, bringing the alphabetical arrangement to INSFELDT. The number of *author-titles* in the series already published are: Titles, 58,886; volumes, 33,265; pamphlets, 47,325. *Subject-titles*: Book-titles, 64,132; Journal articles, 219,154. *Portraits*, 4,335.

THE Chemical Society of Tokio has adopted the plan of printing its proceedings in Japanese with the use of Roman letters instead of Chinese characters.

WE are in receipt of a circular from Cocking & Co., of Yokohama, Japan, calling attention to their manufacture of Japanese oil of peppermint and menthol crystals for which the house is noted. The house also deals in cod-liver oil, oil of sweet-orange, essential oil of camphor, Japanese isinglass ("agar-agar"), vegetable wax, and maltosine ("midsu-ame"—a malt extract made from rice of the consistency and appearance of strained honey.)

THE programme for the meeting of the Michigan State Pharmaceutical Association, held on the 13th, 14th, and 15th of October, and the card of admission to the collation sent us by Mr. A. W. Allen, the local secretary, are very handsome specimens of typography and arrangement, and quite characteristic of the enterprise and good taste which our Michigan friends have shown in so many ways.

WE have received from the Coffin and Wood Chemical Co., of Detroit, Mich., a very handsome sample of menthol which this company is about placing in the market. Its odor is very agreeable and the manufacturers claim for it an unusually high melting point. Those who desire a supply of this substance will do well to communicate with this firm.

THE National Wholesale Drug Association is in session in Philadelphia, as we go to press, having elected the following officers: *President*, Mahlon N. Kline, of Philadelphia; *Vice-Presidents*, A. H. Jones, Philadelphia; James C. Richardson, St. Louis; J. L. Bird, Boston; Charles H. Pettet, Louisville; F. A. Paxon, Kansas City; *Treasurer*, S. M. Strong, Cleveland; *Secretary*, A. B. Merriam, Minneapolis; *Board of Control*, James C. Richardson, St. Louis; Daniel R. Noyes, St. Paul; Charles Osgood, Norwich, Conn.; J. W. Rankin, Atlanta, Ga.; J. S. Ferrard, Detroit. A number of additions have been made to the membership, and the Association has adopted a resolution increasing the annual dues from $10 to $15; the extra $5.00 to be devoted to the formation of a benevolent fund.

Materia Medica Collection.

STUDENTS of pharmacy and medicine are interested in an offer by Parke, Davis & Co., of Detroit, to furnish for ten dollars, a collection of 288 specimens of crude drugs of vegetable origin, in common use, including all that are at present officinal and many besides, providing they receive at least fifty orders in advance. Each specimen will be packed in a little box with a numbered label, and an index or key will accompany the case which holds the collection. This arrangement will facilitate practice in the identification of drugs. The case will be 23x16x13½ inches in its dimensions, and its general appearance is shown in the accompanying illustration.

Semi-annual Report on Commercial Drugs and Chemicals.

(From Gehe & Co.'s September Report, 1885.)

Agaricine—a principle of feebly acid properties, prepared from agaric (which has been used with success for suppressing excessive sweating), has been in increased demand.

Antipyrin—may justly be regarded as the *first* artificial base of importance. It is, under certain circumstances, a true rival of quinine. Its consumption is estimated to amount already to *one-fifth* of that of quinine, and is likely to make still further progress.

Atropine.—Gehe & Co. attribute their action in demanding higher prices for their atropine to the fact that belladonna *root* was about thirty per cent higher in price.

Balsam of Peru, white—said to be obtained from the *fruits* of the balsam tree, has been received by Gehe & Co. in small quantity, only sufficient for furnishing specimens.

Bismuth—has remained unchanged. Up to the present time no definite information has been received regarding the extent of the Australian production, which threatened to become a formidable rival to the Saxon and Bolivian product. Bismuth ore has lately been offered from Norway, and metallic bismuth derived from a new Bolivian source has also been lately offered in Hamburg.

Bismuth Subnitrate.—The German Pharm. requires that not more than *traces* of chlorine should be present, shown by the test-liquid producing not more than an opalescence without rendering the solution opaque. It is unreasonable to demand more, for at a certain stage of the process it is necessary to get rid of any silver that may be present by the cautious addition of hydrochloric acid; and no matter how carefully this may be done, a little chloride of bismuth will eventually remain in solution in the nitrate and be precipitated with the latter.

Bromine.—Dr. A. Frank's "solidified bromine," that is, bromine soaked up by kieselguhr, and pressed into sticks, is constantly becoming more popular, both for disinfection and for scientific purposes. Whenever bromine is to be *weighed*—as in the preparation of bromated soda solution (for nitrogen estimations)—the solidified bromine is of great advantage.

Cassia and *Oil Cassia.*—According to Chinese reports, great damage has been caused in the cinnamon producing districts by inundations. An upward tendency is, therefore, noticeable in the Chinese market, which may also affect the oil.

Cerium and Salts—have been in diminished demand, perhaps because cocaine has been found to be a most superior and prompt remedy against vomiting in pregnancy.

Coca Leaves—have played an important rôle. Last April the stock on hand in Europe and the U. S. was completely exhausted, and the price had advanced to five times what it had been before. Since May, however, the expected reaction has taken place, and the price has receded faster than it had formerly advanced. Probably more than 1,000 bales of coca leaves have since then been shipped to Europe, though the quality was rather inferior. Peruvian coca leaves are thin and narrow, the Bolivian thicker, broader, and darker, and show, on their lower surface, the characteristic elliptic ridge along both sides of the midrib, which is not always the case with Peruvian coca.

Cocaine.—Gehe & Co. report that the belief of the existence of a cocaine-like substance in the young leaves of the horse-chestnut has turned out to be unfounded. When these leaves were worked by the same process as coca leaves, no cocaine, but traces of a volatile liquid base of agreeable odor were obtained. This base acquires a fine red color when treated with sulphuric acid, and appears to be identical with the substance which accompanies, and must be separated from, cocaine. See also under pilocarpine.

Codeine.—The excessive price to which this alkaloid has been driven has already seriously affected its consumption, even in France, where it has been a favorite remedy. It is chiefly owing to the high price of codeine that morphine rules so low. As soon as codeine recedes in value that of morphine will certainly advance. Even without considering the relation of codeine to morphine, the market value of the latter is out of proportion to that of opium, and will probably suffer an advance.

Cubebs—have maintained their high price. From the beginning of this year up to April, the price per cwt. rose from £10 to £15; subsequently it oscillated between the latter figure and £12, and at the present time (Sept. 1st) is again at £14 10 *sh.* The imports in England and Holland were comparatively small, and often consisted of the light-gray large berries which are regarded as spurious, and are said to be derived from *Piper Crassipes* and *Daphnidium Cubeba.* It has been recommended to test them by grinding them in a mortar with addition of a few drops of concentrated sulphuric acid, whereby genuine cubebs acquire a carmine-like color, the berries of *Piper Crassipes* a reddish-brown, and those of *Daphnidium* a yellowish-brown tint. Mixtures of genuine and spurious cubebs turn bright brownish-red. A decoction of genuine cubebs is said to give, with a trace of tincture of iodine, an indigo-blue color, a reddish one with *Piper C.*, and no color with Daphnidium, while a mixture of genuine and spurious turns pale violet-blue. [The above-named reactions need confirmation.—ED. A. D.]

Helinin—lately recommended in Paris as an antiseptic, has been in considerable demand.

Ichthyol.—Though it is probably an exaggeration to place this article—as it has been done—on a level with salicylic acid, it has nevertheless been more frequently used than formerly, particularly as *sulpho-ichthyolate of sodium.* The ammonium salt has also been used.

Insect Powder.—Though about 270-000 lbs. of last year's crop were still in stock at Trieste when the new crop arrived in May, the price of wild closed flowers, which was expected to recede, nevertheless rose from 135 to 165 florins, and even expanded flowers ruled high.

Kefyr (*Kephir*) and *Kapyr.*—The Caucasian milk ferments, used for the preparation of a peculiar kind of kumys, have already been used to a considerable extent. To make up for the fragmentary, and sometimes incorrect, information on this subject, contained in various publicatians, Gehe & Co. furnish the following data, based on reports from Russia, regarding the preparation of kefyr and of kefyr-kumys. The dried fungi, or kefyr granules (see AM. DRUGG., 1884, p. 194) are soaked for three hours in lukewarm water, then washed repeatedly with pure water, placed into fresh milk at a temperature of 30° C. (86° F.), and the latter renewed every day. If occasionally (but gently) agitated, it requires about eight days for the fungi to become enlarged, of a whitish color, and specifically lighter so as to rise to the surface. In this condition they are fit for use. To prepare the "kefyr" proper, as it is called among the mountain inhabitants, the fungi prepared as above are covered with six to eight times their volume of fresh, cool skim-milk, the vessel is closed with a cork, and set aside for twenty-four hours at a medium temperature, occasionally agitating. The liquid is then strained off, the fungi washed with cold water, and one or two further quantities of milk treated in the same manner. The resulting liquid is a beverage resembling fresh buttermilk in appearance and taste. Kefyr-kumys, or, as it is there called, kapyr, is prepared from the preceding by mixing one part of the kefyr with two parts of fresh, cool milk, pouring the mixture into champagne bottles, corking well, and setting aside, occasionally shaking, for 24, 48, or 72 hours, according as a "weak," or "middling strong," or "strong" kapyr is wanted.

Keratin—the liquefied substance of horns, has been proposed as a coating for pills that are to be protected against digestion in the stomach. So far, the article has only been used experimentally. Some regard it as unclean and offensive.

Menthol—has lately been reported to be serviceable as a substitute for cocaine [in 25 or 30% solution in alcohol or ether. Its employment will, no doubt, be rather circumscribed, even under the most favorable circumstances.—ED. A. DR.]

Morphine.—See codeine.

Mustard—is in good demand for the United States, as the Californian crop has been a failure.

Naphthalin.—Gehe & Co. regard the purification of naphthalin (for internal use) by recrystallizing it from alcohol as the only way to obtain a sufficiently pure preparation. In this condition it has a much milder odor than when sublimed. When recrystallized from alcohol, even the whitest sublimed naphthalin leaves behind, in the mother-liquid, a yellow substance not yet investigated, and of very intense odor. To improve the odor of naphthalin, Prof. Rossbach recommends oil of bergamot.

[We are not aware at what time Prof. Rossbach first recommended this, and it is very likely he hit upon it accidentally, just as one of us did. But we have communicated this fact long before Prof. Rossbach has done so, both verbally to many members of the medical profession, to the manufacturers of naphthalin in this country, and also to the readers of our journal, f. i., Jan., 1885, p. 17.—ED. A. DR.]

Opium.—The last crop, which had been estimated at between 9,000 or 10,000 couffes, turned out to be not over 7,500. In consequence, prices advanced about 5%.

Pancreatin—is in very feeble demand. It is now said to be altogether without value, as it is "destroyed" by the acid contents of the stomach.

Physostigmine.—See pilocarpine.

Pilocarpine.—It should be noted that the *neutral* salts of pilocarpine, physostigmine and cocaine, have a faint acid reaction.

Pyridine—has been recommended as a remedy in asthma by Prof. Sée, of Paris. At first it was in brisk demand, but this has diminished. The pure base is used by inhalation, being poured on small plates. The nitrate is suitable for internal use.

Quinine.—The fight for the American market, which has raged during the last six months between the continental and the American manufacturers, has depressed quinine to an extraordinarily low figure, which does not bear a true proportion to its real value, and therefore did not pay the maker. This is no doubt the cause of a slight advance during the last few weeks, which may possibly make further progress. But it is not to be expected that the former high prices will ever be reached again. The continued discovery of substitutes for quinine, the increasing competition among manufacturers, and particularly the totally altered condition of the

bark market, make any return of the former *hausse* quite improbable.

In the U. S. of Colombia, near Bogota and Buccaramanga, attempts have been made to extract cinchona bark. Since alcohol may there be cheaply prepared from cane juice, an undertaking of this kind is quite practicable, theoretically. The experiments, however, are said to have been failures, since the parties who undertook them did not possess the necessary practical knowledge and skill, in consequence of which the resulting product was contaminated with too large a proportion of amorphous alkaloid and resin, and contained too little quinine.

Rhamnus Purshiana Bark—or Cascara sagrada, appears to have become a permanent drug. The brisk demand for it, at least, indicates that it has become a favorite remedy.

Saffron—both Spanish and French, has advanced about 10% in price since last July, owing—as it is said—to a diminished cultivation in consequence of the Cholera.

Tartaric Acid.—In consequence of a coalition of the German manufacturers of tartaric acid, the price of this article has remained almost unaltered (in Germany).

Up to the present moment, this industry has been able to stand the competition of foreign countries, although it has been largely dependent upon *foreign* supplies of crude material (chiefly from Italy). The Italian manufacturers have lately petitioned government to increase the duties of export for crude tartar and argols. Should this be conceded, the result will be very serious for the German manufacturers. [Of course, it will also considerably affect this country. —ED. A. DR.]

The Specific Gravity and Percentage Strength of Aqueous Sulphurous Acid.

FROM a paper on this subject, by Wm. B. Giles and A. Shearer in the *Pharm. Journal* (Sept. 5th), we abstract the following passages:

"We found that it was necessary that, in estimating sulphurous acid when combined with bases, the sulphite should be added to the iodine solution, and not the iodine to the sulphite, and that instead of diluting with water down to the percentage of .05 per cent of SO_2, as recommended by Bunsen, it was unadvisable to use any water at all, but simply to place the weighed solid or liquid body straight into an excess of decinormal iodine solution. The results we obtained in this manner were so satisfactory, and so concordant with those obtained by the much more tedious gravimetric process, that we resolved to make a further research as to whether the same method could be applied to the estimation of the acid itself in the free state. A considerable number of preliminary trials having shown us that the determination was as correct in the latter as in the former case, we finally resolved, as a crucial test, to use the pure condensed sulphur dioxide as a means of comparison. The gas (SO_2) employed was deprived of moisture by passing it through a tube ten feet long, filled with small flints continually kept wetted with concentrated sulphuric acid, and after being liquefied it was redistilled under pressure in glass vessels, and sealed up in small glass bulbs previously tared without any exposure to the air. In this form the sulphur dioxide appears to be almost chemically pure, the only impurity that could be found being a mere trace of hydrocarbon oil derived from the lubrication of the pump with which its condensation was effected. The glass bulbs, holding from three to four grains, being weighed, were broken under a slight excess of pure decinormal iodine solution, contained in a stoppered bottle to avoid any possible loss of gas, the amount of excess being then determined as usual with thiosulphate. The mean percentage of SO_2 obtained was 99.68 per cent, and as this entirely confirmed our previous results, we resolved to construct a table showing the amount of this acid in its solutions of various specific gravity, especially as from various cogent reasons we were led to doubt the accuracy of the only tables we have been able to find as having been made by previous observers."

[The authors give three tables, comprising the results of their own experiments, which we have condensed into *one*, with omission of a few determinations made at other temperatures than the remainder. They also append tables of percentage and spec. grav. given by previous authorities, of which that by H. Schiff is evidently the most incorrect.]

Aqueous Sulphurous Acid.

Specific Gravity at 15.5° C.		Percentage of SO_2.	
Observed.	Calculated.	Observed.	Calculated.
1.0051	1.00495	0.99	1.02
1.0102	1.01025	2.05	2.04
1.0148	1.01435	2.87	2.96
1.0204	1.02020	4.04	4.08
1.0252	1.02495	4.99	5.04
1.0297	1.02945	5.89	5.94
1.0353	1.03505	7.01	7.06
1.0399	1.04040	8.08	7.98
1.0438	1.04340	8.68	8.76
1.0492	1.04900	9.80	9.84
1.0541	1.05375	10.75	10.82

"The results of a very large number of trials, conducted with every precaution that offered itself to our consideration, lead us to propound the following very simple law of the ratio between any given percentage of sulphur dioxide in an aqueous solution at 15.4° C., 760 m.m. and its specific gravity—viz., that under the foregoing conditions, the percentage of SO_2 multiplied by 5, gives the specific gravity of the solution over and above 1.000. Thus, for instance, a solution containing 1 per-cent of SO_2 has a gravity of 1.005; one of 5 per-cent, a gravity of 1.025; one of 10 per-cent, a density of 1.050, and so on; so that, on the other hand, if we know the specific gravity, we can, of course, at once tell the percentage SO_2, provided that this is the only body present to influence the density. Whether this law be absolutely correct or not, is, of course, uncertain, but it is undeniable that the experimental results exhibit an extraordinary agreement with the theoretical figures, and that for all practical purposes it may be assumed to be so."

Crystallized Antipyrin.

AT the recent meeting of German naturalists and physicians, held at Strassburg, Prof. Flückiger exhibited some handsome crystals of antipyrin, which he had obtained from its aqueous solution. These were carefully measured by Liweh, who found them to belong to the monosymmetric system. Prof. Flückiger remarked, that crystallized antipyrin would long ago have appeared on the market if its manufacture were not protected by a patent. At present it is only sold as an indistinctly crystalline powder, which, up to a short time ago, was not always pure and of uniform therapeutic effect.—*Chemiker Zeit.*

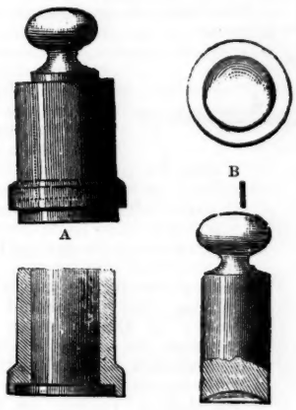
Volatility of Mercuric Chloride.—According to Mr. D. B. Dott, the loss in weight at ordinary temperature is extremely low. In twenty-one days it amounted to only .053 per cent = 0.0001 per cent in the hour. At the temperature of the water-bath the loss is equivalent to 0.50 per cent per hour.

WAFER CAPSULE APPARATUS.

THE publication of the description of wafer capsuling apparatus, after Hager, in our last July number (pp. 125, 126), has brought us several communications drawing our attention to somewhat modified forms designed by others.

Mr. Giovanni Torta, of Turin, is the originator of the apparatus here described. *B* is a little wooden plate, upon which the concave wafer is placed. Upon this is placed the cylinder *C*, the powder poured into this and compressed by means of the piston *D*, which has a concave depression at the bottom. The piston and cylinder are then removed; another wafer, slightly moistened at the edges, is placed on top, and the two pressed together with the stamp *A*. The price of this apparatus is 20 to 25 francs.

Another recently patented and improved apparatus will be described in a subsequent issue.



Torta's wafer capsule apparatus.

Effect of Sunlight upon Hypochlorous Ether.

TRAUGOTT SANDMEYER has prepared and studied a new ether, namely, ethyl hypochlorite: $ClOC_2H_5$, on which he makes a detailed report in the *Berichte d. D. Ch. G.*, 1885, 1767. This ether has some remarkable properties. It is prepared in the following manner:

Chlorine gas is conducted into a ten-per-cent aqueous solution of soda, well cooled by ice, until it is no longer absorbed. This causes the production of free hypochlorous acid:

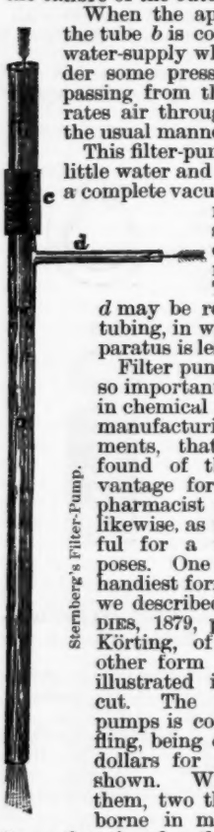
NaOH	+	2 Cl	=	NaCl	+	ClOH
soda		chlorine		sodium chloride		hypochlorous acid

The resulting yellow solution is *immediately* transferred to a separating funnel and mixed with an equal quantity of alcohol, when it becomes almost instantly turbid, and after a few minutes separates, an oily layer floating on the aqueous solution. This oily layer is transferred to another separating funnel, washed with water, and transferred to a small flask containing chloride of calcium.

The ether is a yellow, mobile, exceedingly volatile liquid, of a "hypochlorous" odor, and highly irritating to the respiratory organs. It burns with a luminous green-bordered flame. It may be distilled unaltered, but *its vapor when overheated is explosive.* It is soluble in ether, benzol, and chloroform, but after a while enters into chemical combination with them. It has the remarkable property that, when exposed to sunlight, it begins, after a few minutes, to boil and to bump, which ends with an explosion. This is not caused by the heat-, but by the light-rays, as may be shown by immersing the vessel containing the ether into ice-water during the exposure, when its contents will boil and explode as before.

FILTER PUMPS.

A SMALL, but very serviceable and simple filter pump may be constructed, according to Dr. A. Sternberg, in the following manner: Blow a small lateral tube *d* upon a glass tube *a*, the latter having a length of about 8 inches and a bore of ¼ inch. Another piece of glass tubing *b*, of the same size, is drawn out at one end to a smaller calibre, so that this contracted portion may fit loosely within the tube *a*. The two tubes are joined together by means of rubber tubing, as shown in the cut. The end of the tube *b* should extend at least one-fifth inch beyond the point where the lateral tube *d* is blown on *a*. The orifice of *b* should be as large as the calibre of the outer tube permits.



Sternberg's Filter-Pump.

When the apparatus is used, the tube *b* is connected with the water-supply which must be under some pressure. The water passing from the orifice *b* aspirates air through the tube *d* in the usual manner.

This filter-pump consumes but little water and produces almost a complete vacuum, provided the relative dimensions of the different parts are correctly adjusted. The tubes *a* and *d* may be replaced by brass tubing, in which case the apparatus is less liable to break.

Filter pumps have become so important for saving time in chemical laboratories and manufacturing establishments, that it would be found of the greatest advantage for every working pharmacist to employ them likewise, as they will be useful for a variety of purposes. One of the best and handiest forms is that which we described in NEW REMEDIES, 1879, p. 206, made by Körting, of Hanover. Another form of the same is illustrated in the annexed cut. The price of these pumps is comparatively trifling, being only about eight dollars for the form here shown. When employing them, two things should be borne in mind; *first*, that the outlet pipe for the water should dip below the surface of water contained in a tank or other vessel, so that no air may get into the apparatus by this channel; and *second*, that when the supply of water is to be shut off, air should either *previously* be admitted into the exhausted space or, at least, at the same time as the water is shut off. Unless this is done, water will regurgitate and be projected through the air-pipe into the vessel in which the air had been exhausted. When this happens in a case where the *filtrate* contained in the vessel (*B*, in the cut) is to be preserved for further operation or analysis, the whole labor may have been for naught, since the influx of common water may have introduced numerous sources of error. To avoid this drawback, a check-valve may be interposed between the filter pump and the vessel to be exhausted. But even this is no sure protection, in our experience, since even the best check-valve will get "stuck" after some time, and may leave the operator in the lurch just at a critical moment. An *absolute* protection, however, is secured by using two separate bottles or vessels, connected with each other, the last or outer one of which is used for the filtration. Should any water, by some accident, regurgitate, it will be projected into the intermediate vessel, where it can do no damage.

Hay-fever, according to *Science pour Tous*, can be traced back to the literature of the 16th century.

Useful Formulæ.*

Cachou Aromatisé.

Mace	14 Gm.
Cardamom	10 "
Vanilla	19 "
Cloves	5 "
Orris Root	20 "
Musk	1 "
Oil Neroli	20 Gtt.
" Cinnamon	30 "
" Lemon	40 "
" Peppermint	60 "
Chocolate	100 Gm.
Extract of Licorice	q. s.

Reduce the first six ingredients to fine powder. With the aid of the extract of licorice make a mass weighing 200 Gm., and divide it into 200 pills. Coat them with silver.

Dentrifrice.

a. Pastes.

1. Castile Soap	425 parts.
Calcium Carbon., precip.	425 "
Orris Root, powd	150 "
Carmine	5 "
Oil Peppermint	10 "

With the aid of glycerin make a paste. This is known as *odontine*.

Körting's filter pump in position.

2. Salicylic Acid	10 Gm.
Calcium Carb., precip.	100 "
Venetian Talc.	25 "
Castile Soap, pd.	25 "
Pumice Stone, pd.	25 "
Sugar	15 "
Carmine	2 "
Oil Peppermint	50 drops.

With the aid of glycerin make a paste.

b. Powders.

1. Magnesium Carbon.	25 parts.
Orris Root, pd.	50 "
Castile Soap, pd	75 "
Calcium Carb., precip.	150 "
Oil Peppermint	2 "
2. Crabstones, pd	100 parts.
Cuttle-Fish Bone, pd.	100 "
Cinnamon, pd.	25 "
Orris Root, pd.	25 "
Charcoal	25 "
Vanilla, pd.	1 "
3. Oyster Shell, ppd	400 parts.
Orris Root, pd.	50 "
Magnesium Carb.	50 "
Oil Peppermint	2 "

Eau Anathérine.

Cinnamon	10 Gm.
Cinchona Bark, red.	10 "
Guaiac Wood	10 "
Cloves	10 "
Red Saunders	20 "
Alcohol	2,500 "
Rose-Water	500 "

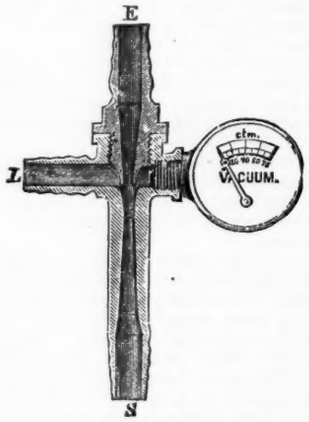
Digest the solid ingredients, reduced to a moderately coarse powder with the alcohol and rose-water a few days, filter and add

Oil Sage	30 drops.
" Cinnamon	30 "
" Cloves	30 "
" Mustard, ess.	3 "
Spirit of Nitrous Ether	5 Gm.

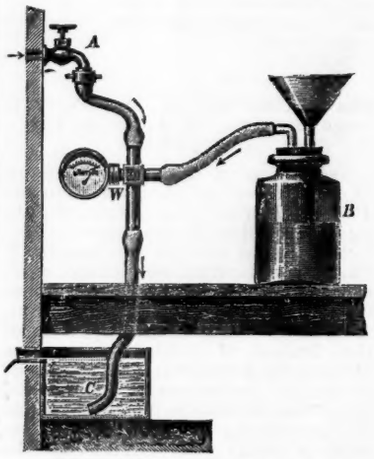
Eau de Botot.

Anise	100 Gm.
Cloves	25 "
Cinnamon	25 "
Oil Peppermint	5 "
Cochineal	5 "
Vanilla	1 "
Alcohol	800 "
Rose-Water	200 "

Digest 8 days, and filter.



Section of Körting's filter pump.



Arrangement of Körting's filter pump.

Eau de Naples.

Borax	10 Gm.
Rose-Water	150 "
Spirit Camphor	5 "
Tinct. Benzoin	2.5 "

Dissolve the borax in the rose-water, and add the other ingredients. Filter.

Eau sans pareille.

Oil Neroli	2 parts.
" Lemon	3 "
Extract of Ambergris	3 "
" " Musk	4 "
Oil Bergamot	5 "
" Orange (Port.)	5 "
Alcohol	600 "

(Formulæ for ext. of ambergris and musk will be found in our September number, page 167.)

Extract of New-Mown Hay.

Cumarin	2 Gm.
Oil Neroli	15 drops.
" Rose	15 "
Alcohol	1,000 Gm.

(Other formulæ for this and some of the following odors will be found in the September number, page 167–168.)

* From *Kiczka's Pharmaceutisch. Manuale* (8vo, Wien, 1885).

Extract of Heliotrope.

Heliotropin	10 Gm.
Oil Neroli	1 "
Tinct. Musk	10 drops.
Alcohol	2,000 "

Extract of Musk.

Ambergris	1 part.
Oil Rose	3 parts.
Musk	10 "
Alcohol	1,000 "

Extract of Patchouli.

Oil Rose	2 parts.
" Patchouli	10 "
Alcohol	1,000 "

Extract of Reseda.

Reseda (Mignonette) Flowers, fresh	100 parts.
Water	300 "
Alcohol	200 "

Macerate one day, then distill off 250 "

Extract of Violets.

Oil of Orris Root	5 parts.
Alcohol	2,000 "

Extract of Ylang.

Oil Neroli	5 drops.
" Rose	10 "
Musk	0.1 Gm.
Oil Ylang	2 drops.
Alcohol	1,000 "

Millefleurs.

Oil Orris Root	2 Gm.
Balsam Tolu	1 "
Oil Ylang	1 "
Musk	0.1 "
Alcohol	1,000 "

Fly Paper.

1. Arsenite Potassium 20 parts.
   Carbonate Potassium 15 "
   Water 400 "
   Sugar 65 "

Dissolve, saturate red blotting paper with it, and dry.

2. Quassia 150 parts.
   Water 350 "

Make a decoction, saturate red blotting paper with it, and dry.

(It is advisable to use paper upon which is distinctly printed the word "poison.")

Toilet Vinegar.

Musk	0.1 Gm.
Oil Lavender	0.5 "
" Rosemary	0.5 "
" Orange, Big	1 "
" Neroli	1 "
" Bergamot	5 "
" Lemon	5 "
" Cedrat	5 "
" Orange, Port	5 "
Tinct. Tolu	20 "
" Benzoin	20 "
" Krameria	2.5 "
Alcohol, 80%	1,000 "
Vinegar, 6%	300 "

Macerate one month, then filter.

Toothache Drops.

1. Camphor 25 parts.
   Chloroform 200 "
2. Oil Peppermint 1 part.
   Camphor 10 parts.
   Oil Cajuput 15 "
   Chloroform 50 "
3. Oil Mustard, ess 2 parts.
   Alcohol 30 "

Pastilles of Tamarind.

Tamarind Pulp	800 parts.
Glycerin	50 "
Senna, powd	150 "
Resin Podophyllum	1 part.

Mix the tamarind pulp and glycerin, and heat on a water-bath until the mixture has the consistence of a thick extract. Then add the other ingredients, previously well mixed, and make a mass to be divided into one hundred pastilles. [Great care should be taken hat the resin of podophyllum is uniformly mixed with the senna.]

Cocaine as a Remedy in Sea-Sickness.

In our issue of December, 1884, while giving an account of cocaine and its salts, and the new therapeutic effects discovered in it, we wrote as follows (Am. Drugg., 1884, 231):

"If ever a remedy, on purely theoretical grounds, held out any hopes of being serviceable in *sea-sickness*, it seems to us that cocaine is one of these. At all events, it will be worth while to try its effects."

We learn now that Dr. Manassein, of St. Peterburgh, undertook a voyage on purpose to try its efficacy in this distressing complaint. He states (*Berl. Klin. Wochen.*, Aug. 3d; *Pharm. Journ.*), that two individuals to whom he administered the hydrochlorate of the alkaloid on starting, were, for the first time in their lives, free from sea-sickness during a period of forty-eight hours of rough weather, and enjoyed a good appetite the whole time. A child, six years old, attacked early in the morning with sea-sickness, was able to play about during the storm after taking the cocaine. In another case, in which a girl of eighteen years of age had been sick for twenty-four hours before taking the cocaine, six doses proved effectual. Dr. Manassein thinks, therefore, that he is quite justified in inferring that in cocaine we have a certain and harmless remedy against sea-sickness.

It remains to be seen whether it will prove efficacious under all circumstances, and whether its effects are lasting enough to tide the passenger over the critical period, which is the first two or three days of a sea voyage. It seems advisable, in view of the local anæsthetic action of the drug, to administer it on an empty stomach, so that its action may be rapid and not interfered with. Further reports on its effects in sea-sickness will soon be available.

Improved Bengal Lights.

It is well known that the compositions of the colored Bengal lights are dangerous, on account of their spontaneous inflammability; and it is well, therefore, to publish the results of Thoerner's investigation on this subject. According to Thoerner, only perfectly pure chemicals should be employed, especially when potassium chlorate is one of the constituents. Friction, shock, and heating increase the danger. The point of inflammation generally changes in time, and becomes lower, so that the danger increases, with age. The addition of lycopodium does not in any way diminish the danger, as has been stated by some.

White.—I. Potassium nitrate, 24; washed flowers of sulphur, 7; arsenious sulphide, 2. II. Potassium nitrate, 4; flowers of sulphur, 2; antimonious sulphide, 1. III. Potassium nitrate, 16; sublimed sulphur, 8; flour, 3. IV. Potassium nitrate, 36; sublimed sulphur, 7; antimony, 12. V. Potassium nitrate, 8; antimonious sulphide, 1.5; washed flowers of sulphur, 2.5. VI. Potassium nitrate, 12; washed flowers of sulphur, 3; antimony, 2. *White* (theatre fire, poured out loose).—I. Potassium nitrate, 72; sublimed sulphur, 12; antimonious sulphide, 12; arsenic disulphide, 8; shellac, 1. II. Potassium nitrate, 32; sublimed sulphur, 8; antimonious sulphide, 12; red lead, 11. *Yellow.*—I. Sodium nitrate, 24; arsenious sulphide, 2; sulphur, 7; antimony (crude), 2. II. Potassium nitrate, 16; sulphur, 4; flour, 16; amber, 4; pine resin, 3; pitch, 4. III. Sodium nitrate, 6; sulphur, 1; soot, 1. *Blue.*—I. Potassium nitrate, 16; antimony (crude), 8; zinc, 7. II. Ammoniacal copper sulphate, 2; potassium chlorate, 4; sulphur, 1. III. Potassium chlorate, 3; mountain blue, 1; sulphur, 1. *Violet.*—Potassium chlorate, 49; sulphur, 25; precipitated calcium carbonate, 20; black oxide of copper, 6. *Red.*—I. Potassium chlorate, 5; strontium nitrate, 16; arsenious sulphide, 1; sulphur, 2; soot, 1. II. Potassium nitrate, 5; sulphur, 2; antimony (regul.), 1. III. Strontium nitrate, 20; potassium chlorate, 2; sulphur, 5; antimony (crude), 0.5; charcoal, 2. IV. Strontium nitrate, 48; flowers of sulphur, (washed), 9; pulverized charcoal, 2; potassium chlorate, 8. V. Strontium nitrate, 5; washed flowers of sulphur, 15; charcoal, 0.5; potassium chlorate, 6.5.

A New Source of Chloroform.

An Albany chemist, Gustavus Michaelis, claims to have discovered a method of producing chloroform at greatly reduced cost and, at the same time, of better quality. Alcohol as a base is not used, and thus the cost of chloroform is lessened one-fourth. Wood is decomposed at high temperatures, and from the residual crude acetates which arise from the proper chemical treatment of the products of the decomposed wood, other products are secured from which the chloroform is obtained. A residual matter is also obtained which yields acetic acid, or purified acetates. Part of the Aniline Works have been secured, and a plant is in position which will enable the company to put out 500,000 pounds of chloroform per year, with unlimited possibilities of growth.—*Oil, Paint, and Drug Rep.*

Influence of House-Plants.

The question whether growing plants are injurious to health when placed in a bed-room has often been discussed. According to Dr. J. M. Anders (*Gardiner's Chronicle*, June 21st) the numerous experiments during three or four years show that ozone is rarely found in dwelling-rooms except when a number of flowering plants are introduced. Even inodorous plants were found to exhale ozone in a lesser degree. Sunshine or strongly-diffused sunlight is, however, as essential to the production of ozone as it is to the work of assimilation and transpiration.—*Pharm Jour.*

[It is doubtless owing to the difficulty with which many flowering plants are made to flourish in city houses that so few of them are cultivated. The reason for this, in most cases, is to be found in the escape of illuminating gas from imperfect fixtures. A very small proportion of illuminating gas present in the air of a room will poison the hardiest plant and cause it to lose its foliage.—Ed. Am. Drugg.]

Detection of Cinchonidine in Sulphate of Quinine.

De Vrij recommends, in the *Pharm. Weekblad*, the following method for the determination of cinchonidine in quinine sulphate: Five grammes of the preparation under examination are dissolved in 11 C.c. normal sulphuric acid, by warming to about 60° C. The solution is evaporated in a weighed dish to incipient crystallization, and the crystalline mass, formed on cooling, mixed with a sufficient quantity of distilled water to bring it up to the original weight. The acid sulphate of cinchonidine goes into solution. The solution is separated from the undissolved acid sulphate of quinine, shaken up with excess of soda and 25 Gms. ether, the latter of which brings the separated cinchonidine in crystals to the surface of the liquid, where they can be collected and weighed. The method is not absolutely accurate, but suffices to detect a mixture of two per cent cinchonidine with quinine sulphate.—*The Analyst*, 1885, 148.

Spirit of Nitrous Ether.

AT the late meeting of the British Pharm. Conference, Mr. A. H. Allen described a number of experiments to demonstrate the strength of the spirit of nitrous ether, commonly known as "sweet spirit of nitre." While the freshly made preparation contains from two to four per cent of real nitrous ether, on keeping, it suffers gradual deterioration, but this becomes much greater when the spirit is diluted with water. Hence the author considers the intentional addition of water to sweet spirit of nitre for the purpose of adulteration to be very reprehensible. Mr. Allen expressed a doubt whether any appreciable quantity of the active principle remained in an aqueous mixture which had been made several days. Hence, when spirit of nitrous ether is to be given as a medicine, a certain measure of previously assayed spirit should be added to water and given immediately.—*Chem. and Drugg.*

Palliative for Painful Digestion.

DR. GERMAIN SÉE recommends the following remedy for the pain experienced by persons suffering from dyspepsia or cancer of the stomach.

Tincture of Hyoscyamus,	
Tincture of Conium, of	
each.....	.....150 grains.
Tincture of Gentian....	75 "
Essence of Anise.....	10 drops.

From ten to thirty drops are to be taken with each meal.—*N. Y. Med. Journ.* from *Union Méd.*

[Chloroform water will also be found a useful remedy in doses of one to three drachms, with water.—ED. AM. DRUGG.]

Relative Safety of Anæsthetics.

DR. B. W. RICHARDSON, of England, gives the following summary of the anæsthetics from the point of view of their safety:

Safe.—Ethyl bromide, ethyl chloride, sulphuric ether, ethene (olefiant gas), ethene chloride, methyl bromide, methyl chloride, methyl ether, methine chloride, methane (marsh gas), nitrous oxide—methylic ether, in his opinion, being the safest of all.

Useful, but requiring care—chloroform, ethene dichloride.

Of doubtful value.—Amyline, amyl chloride, butyl chloride, benzol, carbon disulphide; carbon dioxide, carbon tetrachloride, methyl alcohol, methylol, spirit of turpentine.

Dangerous.—Amyl hydride, butyl hydride, carbon monoxide, ethyl hydride.

Strophanthin.

THIS new diuretic is derived from *Strophanthus hispidus* (*S. Kombi*, Oliver) from which negroes in Mungua, Senegambia, and Guinea, prepare an arrow-poison called *Kombi* or inée. The plant is a woody climber, flowering in October or November. The follicles, 10 to 12 inches long, contain from 150 to 200 seeds weighing each about half a grain and bear a plume-like tuft at the extremity of a delicate stalk. The active principle is crystalline, intensely active, and allied to digitalin. The hypodermic dose is $\frac{1}{125}$ to $\frac{1}{75}$ of a grain.—PROF. FRASER in *Br. Med Jour.*

Oxygen is reported by Kirnberger (*Deutsche Med. Wochenschr.*) to have been used successfully in a case of leuchæmia in which arsenic failed. Its inhalation resulted in increase of strength, diminution of the swelling of the spleen and the number of white blood-corpuscles, and restoration of the proportion of red corpuscles.—*N. Y. Med. Journ.*

So-called Soluble Essence of Ginger.

As early as 1859, Mr. Barnard Proctor presented a process for a soluble essence of ginger, to be used in making syrup. It was as follows: 6 drs. tincture of ginger, 6 ounces of water, 2 grains alum, 10 minims (drops) of liquor potassæ. Mix; let stand and filter. This essence is a soluble one, but is deficient in aroma. In answer to a query: How to prepare a fluid extract of ginger that will not turn white on being added to water, Mr. J. L. A. Creuse gave the following: Fluid extract ginger, 1 pint; water, 2 pints; carbonate magnesia, 2 ounces. Mix, shake frequently during twenty-four hours, filter, evaporate to ½ pint; add ½ pint alcohol. In 1879, Mr. John C. Thresh presented to the British Pharmaceutical Conference two valuable papers. One was an analysis of the ginger rhizome (root), and in the other he gave an improved formula for the soluble essence of ginger, as follows: Add slaked lime to one part of strong tincture of ginger till it ceases to lose color; filter, add proof spirit through the filter to make two parts; add dilute sulphuric acid until the yellow color suddenly disappears; after twenty-four hours filter, dilute to four parts with water; add powdered pumice or silica and filter. In 1884, a paper was read before the Michigan Pharmaceutical Association, by Mr. Carl Riebe, on syrup of ginger. Mr. Riebe's process is as follows: A sufficient quantity of filter paper, in small pieces, contained in a wide-mouth bottle, is saturated with fluid extract of ginger, exposed to a heat below 140 degrees Fahrenheit, until the alcohol is evaporated. Add water, shake repeatedly, and macerate twenty-four hours; transfer to a strainer, and drain off the liquid. Transfer the pulp to a percolator, in the bottom of which is a layer of fine purified sand; pour on the strained liquid, and after this has passed through the pulp and sand, add a sufficient quantity of water to make the desired measure. Then dissolve the sugar in this percolate. These processes or modifications, viz., Creuse's, Thresh's, and Riebe's, but principally the first two, are the processes in use to-day."

In speaking of ginger ale preparations, the writer says: "It will be noticed that in nearly all the formulas for ginger ale, capsicum is found. Of course this is for the reason that a sufficient pungency to satisfy a popular demand cannot be obtained from ginger alone. That this is so is also plainly indicated by the well-known fact that a largely increased sale of oleo-resin of capsicum has followed very closely on the increase in the use and sale of ginger ale and allied preparations." This unrestricted use of capsicum cannot be too severely condemned. Physicians and judges of fine quality ginger ale are opposed to its introduction, on the ground of being unnecessary and hurtful.

Hydrocyanic Acid as a Fermentation Product of Linseed Meal.

W. O. SENIOR, following a notice by A. Jorissen in the *Bull. Acad. Roy. Belg.* that "a mixture of linseed meal and warm water, when kept at a temperature of 25° C., and then distilled, yields a distillate containing hydrocyanic acid," made a series of experiments and reported the results at the Br. Pharm. Conference. The result of his experiments showed that time, alkalinity, and exposure to air influence the amount of acid produced; time effecting the result chiefly within the first 24 hours, after that only to a small extent, whilst the maximum quantity is obtained when all three conditions are united.—*Chem. and Drugg.*

Brierwood Pipes.

THESE pipes are made from the root of *Erica arborea*, a species of heath, and not from the root of a brier, as is generally supposed. The roots are chiefly collected on the hills of the Maremma in Italy, where they are found of great size. They are cleansed from earth and decayed portions, cut into blocks of suitable size, boiled gently for twelve hours, to give them the rich coloring for which the pipes are noted, and the blocks are then packed in bags containing from forty to one hundred dozen each.

Many of the finished pipes are made in Sienna and Grosseto; others in St. Cloud, France, and it is from the latter source that they derive the name of *pipes de Bruyère*, which has been corrupted into brier-root pipes.

Copaivi Emulsion (Van de Walle).

THE author emulsionizes copaivi balsam according to the following recipe:—Balsam of copaivi, 50; white sugar, 25; honey, 25; distilled water, 5; essence of mint, 0.5; carmine (to color), q.s.

The balsam, sugar, honey, and water, are mixed together in a basin, and slightly heated for ten minutes with constant stirring. The essence and color are added when the mixture is completely cold. The preparation forms a red gelatinous product, almost entirely devoid of the odor of copaivi.

French Sulphur Ointment.

THE ointment largely used in France in the treatment of scabies, etc., known as Fournier's ointment, from the name of Dr. Fournier, who first prescribed it, is made as follows:—Sodæ carb., 1½ ounces; sublimed sulphur, 3 ounces; gum tragacanth, 15 grains; glycerin, 6 fluid ounces.

It is said to be less irritating than most other compound sulphur ointments. The pure English sulphur ointment, which consists simply of flour of sulphur and lard, has no irritating action whatever, and is found to be quite as effective as many compound ointments, which, like the above, contain either an alkaline sulphide, or a mixture of sulphur with some alkaline substance.

A New Reaction for Albumin.

IF a solution containing albumin be acidulated with formic acid, and a solution of gold chloride (0.1%) be added drop by drop, the mixture being warmed, bubbles of gas are formed on the sides of the test-tube; the solution turns first rose-red, and then assumes a beautiful purple-red; on further addition, a blue color; finally, a blue flocculent precipitate separates out. The rate of change to blue is in proportion to the dilution of the solution of albumin. The blue or violet coloration is also caused by other organic substances, such as grape sugar, starch, glycerin, leucin, tyrosin, creatin, uric acid, and urea. Pure gelatin gives a dichroic brown or reddish coloration. Impure gelatin (probably containing albumin) gives, when sufficiently concentrated, the purple color. Gum solutions give also a beautiful purple-red coloration, which differs, however, from the albumin reaction by changing to orange-yellow on the addition of potash or soda. The reaction can be made to succeed with pure albumen solution of a dilution of 1 to 1,000,000. The presence of salt, urea, uric acid, or grape sugar does not interfere, when not present in excess; otherwise it is only necessary to use more formic acid and gold chloride.—D. OXENFELD, in *Centralbl. f. d. Med. Wiss.*; *The Analyst.*

The Assay of Belladonna; Estimation of Alkaloids in the Leaves.

(From a paper read at the Brit. Pharm. Conference, abstracted in *Chem. and Drugg.*)

In a previous communication to the Pharmaceutical Society, Prof. Wyndham Dunstan and M. Francis Ransom described a new and simple process for the estimation of the alkaloids in the root of the *Atropa Belladonna*. This consisted in extracting the root with a mixture of chloroform and alcohol, and removing the alkoloidal salts from this mixture by agitating it with water. From the aqueous solution, the alkaloids are liberated by ammonia, and removed by chloroform. They had since sought to devise a reliable and convenient process whereby the alkaloids could be isolated without loss in a pure state from the leaves of the *Atropa Belladonna*. For this purpose, the method which had proved successful with the root had to be considerably modified. In extracting the leaves, absolute alcohol alone is to be preferred to a mixture of alcohol and chloroform. By continuous percolation with boiling absolute alcohol, the leaves can be freed from every trace of alkaloid. It was found that the best method of separating the whole of the atropine and hyoscyamine from the alcoholic liquid is to dilute it considerably with water acidulated with hydrochloric acid, and then to remove the chlorophyll and fat by repeatedly agitating it with chloroform. In this way an acid solution of the alkaloids is prepared, from which the bases may be readily obtained pure by adding excess of ammonia and extracting the alkaline liquid with chloroform. Chloroform is by far the best solvent for extracting atropine and hyoscyamine from an alkaline liquid. Ether, quite apart from manipulation difficulty, is required in much larger quantity to effect the same result.

A definite process for estimating the atropine and hyoscyamine in the leaves of *belladonna* is as follows: Twenty grammes of the dried and finely powdered leaves are well-packed in an extraction apparatus, and exhausted with about 100 C.c. of absolute alcohol. The alcoholic liquid is diluted with about an equal volume of water made slightly acid with hydrochloric acid. The chlorophyll, fat, etc., are then removed from the slightly-warmed liquid by repeatedly extracting it with chloroform until nothing further is removed by the solvent. The aqueous liquid is made alkaline with ammonia, and the alkaloids extracted by chloroform, by evaporating which a residue of pure alkaloid is obtained, and dried by heating it at 100° until a constant weight is attained. A specimen of dried foreign leaves contained 0.22 per cent of total alkaloid, and a specimen of English leaves which had been somewhat overheated in drying contained 0.15 per cent. But the authors believe that both specimens contain less alkaloid than English leaves which have been carefully grown and gathered.

Altitudes Least Liable to Malaria.

While malaria belongs chiefly to low-lying districts, it may, under favorable conditions, exist at great elevations. On the Tuscan Apennines it is found at a height of 1,100 feet above the sea level, on the Pyrenees and Mexican Cordilleras 5,000 feet, on the Himalayas 5,400 feet, on the Island of Ceylon 6,500 feet, and on the Andes 11,000. Under ordinary circumstances, however, a certain moderate altitude affords immunity from malaria. The elevation of entire security is not positively known, but it has been approximated as follows: In Italy 400 to 500 feet, in California 1,000 feet, in the Appalachian chain of the United States 3,000 feet, in the West Indies 1,400 to 1,800 feet, in India 2,000 feet. In any of these regions malaria may drift up ravines to an indefinite height.

Test for Diabetic Sugar.

Prof. Seegen, of Vienna, adopts the following mode of examining urine when diabetes is suspected. The urine is first filtered through *blood charcoal*. The charcoal is then washed repeatedly with distilled water, and the third or fourth washing is tested with Fehling's solution. The blood charcoal retains the substances which interfere with the reduction of the copper. The first washing sometimes fails to shows the presence of sugar, but the third washing always will, if sugar is really present. It is claimed by Prof. Seegen that the use of *blood* charcoal is essential, bone charcoal being inefficient.—Dr. McBride in *Med. Record*, Oct. 17th, 1885.

On the Best Method of storing and Preserving Dried Vegetable Drugs.

A very larg eproportion of our materia medica in every-day use consists of dried barks, flowers, leaves, woods, roots, fruits, and entire herbs. It is an admitted fact that, however carefully and perfectly these vegetable tissues may be desiccated, or dried, for preservation, they invariably retain a certain proportion of moisture. This, of course, varies very much in different vegetable products, but it is always present, and is a factor of which we have to take careful note if we would preserve these articles in a thoroughly efficient condition, and with their active principles unimpaired. If we take an average sample of any dried medicinal leaves, and inclose them in a tightly-stoppered bottle, we notice, after a time, that a fungoid growth sets in, more particularly in the upper part of the mass. In fact, the leaves become, in common parlance, mouldy or musty. The fact that the mould is noticed more particularly in the upper part of the bottle gives us a clue to the reason of this. The continually recurring changes of temperature (which on a hot shop-shelf, for instance, are very violent) volatilize and condense the moisture repeatedly. This condensation, taking place on the upper layers of the drug, causes moulding, and, perhaps, in many instances, sets up fermentations of various kinds. The result of these changes must of necessity be damaging in the extreme to the active principles of drugs, many of which principles are exceedingly delicate and unstable. Digitalis and coca leaves may be quoted especially as examples of drugs requiring extreme care to preserve their active principles intact.

It follows that the two main points to be observed in storing such drugs are—first, that they are not kept in hermetically sealed vessels and so deprived of free access of air; and secondly, that they are kept the year through in as equable a temperature as possible. Every well-appointed pharmacy should contain a set of shelves remote alike from hot gas at night and from external changes of temperature. The shelves should be adjusted so as to contain a set of tins with lift-off lids, like biscuit boxes, which boxes will answer the purpose. The tins on each shelf should reach to within an inch of the shelf above. From the edges of the shelves should depend a strip of leather, as in book-shelves, hanging just below the top edges of the tins on shelf below, and keeping the dust from their lids. The tops of the tins should have some fifty or sixty apertures perforated all over them. These perforations may be readily made by giving the lid a smart blow with a stout, sharp brad-awl, firmly held in the hand. This set of tins on shelves is far preferable to either drawers, parcels, or wooden boxes. Drawers, unless constantly used, have a habit of accumulating dust and cobwebs inside them to an alarming extent. Mites also often infest one drug from another throughout a whole range of drawers. Drugs also contaminate each other when of powerful odor. They are also liable to be strongly impregnated with the tenacious odor of deal or cedar from the drawers themselves. The same objections apply more or less to the storage of drugs in boxes. Paper parcels do not even give the protection of a wooden receptacle, and are also horribly dirty, it being almost impossible to keep them free from large accumulations of dust. Another objection to them is the difficulty of affixing, and keeping plainly visible, labels which can be read at a glance.—*Monthly Magazine.*

Chloral as an Antidote to Strychnine.

Mr. Frank W. Truman writes to the *Chem. and Drugg.* (August) as follows:

The recent sad death of a country chemist from strychnine, and the statement made by a weekly newspaper, that "no antidote was given him, the deceased being passed that," induces me to relate my experience regarding the particular alkaloid mentioned, and the means by which I have successfully avoided any fatal results to my patients—patients who have always been quadrupedal ones—cats and dogs. Whether the higher animal, man, would be equally amenable to the same treatment successful with animals is at least worthy of trial on human beings, and that treatment is simply the exhibition of very large doses of chloral hydrate, repeated at every symptom of recurring spasm. Small doses are useless. I have had some eight or ten cases in the last four or five years, and have not lost one.

To illustrate the large doses I advocate, I quote one case, which, I think, was that in which I had to give the largest quantity. A small bull-terrier swallowed the whole of a 6 oz. packet of Battle's Killer, and was brought in to me in almost the last stage of strychnine poisoning. I administered directly between two and three drachms of chloral hydrate, and gave a saturated solution of the salt to the customer, with directions to give a teaspoonful on the recurrence of the least sign of twitching. I myself gave another dose of two drachms after business hours, and altogether the dog took nearly three oz. of chloral in the course of thirty-six hours, and completely recovered. It appears to me that no injurious effects follow the exhibition of chloral when even a small quantity of strychnine has previously been taken, and a few months ago I tested that idea in the case of a large hound, which had swallowed evidently, by the slightness of the twitching, but very little, and to which I gave eighty grains of chloral, and repeated the dose in a couple of hours, without the animal showing any signs of chloral-poisoning, and with complete suspension of all strychnine symptoms.

This suggests whether the reverse process would be equally efficacious, and strychnine prove an antidote to chloral.

Volatility of Oxalic Acid.

In connection with a description of the reaction between phenol and nitrobenzol, in the *Journ. für prakt. Chem.*, 1885, 543, M. Siegfried makes the statement that oxalic acid sublimes a few degrees below 100° C. (212° F.), which fact is not recorded in any work of reference.

Testing Chloride of Lime.

THE Pharmacopœia Committee of the German Pharmaceutical Society recommends a modification of the process of assay of chloride of lime in the following manner.

Mix 3.55 Gm. of chloride of lime (chlorinated lime) with water, and dilute the mixture to 100 C.c. Then take 10 C.c. of this turbid mixture, add 1 Gm. of iodide of potassium and 10 drops of hydrochloric acid, together with a little gelatinized starch, and titrate with $\frac{1}{10}$ normal solution of hyposulphite of sodium [containing 24.8 Gm. in a liter, same as that prescribed by the U. S. Ph.], of which not less than 20 C.c. should be consumed to discharge the blue color.

The German Pharmacopœia directed to take 0.5 Gm. of chloride of lime, to mix this with water and to titrate the whole of the mixture.

Objection has been made to this, because it is known that chloride of lime becomes unequal in strength, in the different layers of a package, by keeping, and a small sample of 0.5 Gm. removed for testing does not represent the average composition of the whole package. To remove this defect, the Pharm. Comm. now proposes to take a larger sample, 3.55 Gm., to mix it with water to 100 C.c., and to measure off 10 C.c. of the *turbid* mixture for assay. Of course, the chloride of lime is not completely soluble in the 100 C.c. of water, and the undissolved portion contains a considerable amount of the chlorinated lime which must be taken into account.

In our opinion, however, the proposed improvement is liable to cause greater errors than the officinal process. It will be practically impossible to measure off 10 C.c. of the *turbid* mixture so that it shall contain its exactly proportionate part of the undissolved lime. If it be attempted to divide the 100 C.c. of mixture obtained into ten portions of 10 C.c. each, or, at least, to remove nine equal portions, even with the greatest care it will be found that the results of the assay will vary somewhat in the different portions. A skilled operator, of course, will succeed better in obtaining uniform results than the average pharmacist.

We think that the defect attempted to be remedied by the Germ. Pharm. Comm. can be removed in a much more simple manner. All that is necessary is to remove a somewhat larger sample from the original package—one which has been taken from several depths—mixing it thoroughly by rapid trituration, and weighing off either 0.355 Gm. or 0.71 Gm. of the mixture for the assay. If the former quantity is weighed off, the number of cubic centimeters of the volumetric solution of hyposulphite consumed will directly indicate the percentage of available chlorine in the sample. If 0.71 Gm. are weighed out, the number of C.c. of the test liquid must be divided by 2 to give the percentage of chlorine.

In the officinal test of the Germ. Pharm., it is not specially said that the hydrochloric acid must be added *after* the iodide of potassium. The Pharm. Comm. points out that this is necessary, since otherwise a loss of chlorine will take place.

The lesson to be learned from the above is that the assay process of the U. S. Ph., which is in all other respects correct, may be slightly improved and enlarged by adding the words here printed in italics:

If 0.71 Gm. of chlorinated lime, *representing an average sample of the lot to be tested*, be mixed with a solution of 1.25 Gm. of iodide of potassium in 120 C.c. of water, and 9 Gm. of diluted hydrochloric acid be then added, the red-brown liquid should require for complete decoloration not less than 50 C.c. of the volumetric solution of hyposulphite of sodium (*the number of C.c. consumed, divided by 2, indicating the percentage of available chlorine in the sample*).

Salicylic Lemonade.

A BRITISH medical officer of the Soudan expedition suggested the following "hospital beverage," which was found practically useful in typhoid, scurvy, gout, and other fevers:

Squeeze the juice from ten lemons, and set it aside. Boil the fruit in half to three-fourths of a gallon of water for fifteen to twenty minutes. After standing six hours, take out the lemons, again press them, and throw the exhausted skins away. Add the juice and one-half ounce of citric acid to the liquid, boil for five minutes, and strain. While still hot add to it two hundred grains of salicylic acid, and stir until dissolved. Sweeten to taste with white sugar, and add enough water to make, of the whole, one gallon.

Unless preserved by the aid of a little brandy, the salicylic lemonade should be made fresh after two or three days.

To "brighten" its appearance, add, when cold, a little beaten white of egg, boil for three minutes, and filter.

Half an ounce of gelatin dissolved in the hot liquid before straining (previously soaked for five hours in cold water) will render the lemonade less harsh.—*Br. and Col. Druggist.*

Manna Mixture.

IT is much to be regretted, says Mr. Joseph Ince, that manna has to so large an extent disappeared from English pharmacy. Abroad it is in constant use. I regard manna, dissolved in milk, as far as the treatment of children is concerned, to be a gift of God. It is a safe and effectual laxative, and does not *physic* an infant, the main thing to be avoided.

The following is a useful laxative mixture for an adult:—Infus. rhei, 4 ounces; tinct, sennæ, 6 drachms; manna, 1 ounce; aq. cinnam., *ad* 6 ounces. *M. ft. Mist. Sumat quartam partem o. n. h. s.*

The following was Dr. Abernethy's favorite aperient mixtute:—Mag. sulph. ½ ounce; inf. sennæ co., 6 drachms; aq. menth. vir., 1 ounce; manna, 2 drachms; tinct. senna, 2 drachms; aq. puræ, 2 ounces. *M. capiat coch. ij. mag. mane.*

French Pharmacy.

IT has been decided in France that no pharmacist can refuse to receive into his shop any person who happens to have met with an accident in the streets, nor to deliver on the spot the various remedies that may be requisite in such a case. The French pharmacist only holds his right of opening a pharmacy on these conditions. He is bound to attend to the best of his abilities to any person who may be brought in disabled. He is not obliged to supply his drugs and remedies gratuitously, but he must supply them; and if the injured person is not able to pay for them himself, their cost will be defrayed by the Commissary of Police for the district in which the pharmacy is situated.

Finding a Deposit of Sienna.

Two years ago, the Pine Woods, near Lisbon, Me., could have been bought for $5 an acre. To-day $25,000 an acre is its estimated value. It is owned, *The Lewiston Journal* states, by E. N. Chamberlain, who leased it a few months ago to E. H. Caylor, of Columbus, Ohio. The earth of the tract is yellow, and has been pronounced by Professor Stanley, of Bates College, to be a variety of sienna. An expert pronounces it equal to the best Italian sienna. In the tract owned by Mr. Chamberlain there are 100 acres, and the deposit, which lies from one foot to three feet deep, covers an estimated area of sixty acres.

The Alkaloid Tulipine.

THIS alkaloid is extracted from the garden tulip when fully developed; it occurs, probably, in every part of the plant, even in the brilliantly colored petals. It was discovered some little time back by Gerard, and next alluded to by Ringer in the *Edinburgh Medical Journal*. It acts as a powerful sialogogue, producing a considerable flow of saliva without exerting any action on the pupil of the eye.

Frogs poisoned by tulipine died with the heart in systole and with the same symptoms as those exhibited by animals poisoned with veratrine. Very little, however, is yet known about this new alkaloid, either chemically or therapeutically; it is supposed to be a muscular poison which acts upon the medulla and the nerves of sensation. Unlike many other alkaloids, it appears to have no action whatever on the pupils. It is not improbable that it will be found related to colchicine and scillitine, derived from plants of a similar nature.

Barnouvin's Belladonna Suppository.

EXTRACT of belladonna, 0.01 part; lard, 0.50 part; white wax, 1.00 part; cacao butter, 3.00 parts.

If these quantities are taken in grammes (for instance, cacao butter 3 grammes), the above proportions represent one suppository.

CORRESPONDENCE.

Butter Analysis.

Editor American Druggist:—

There is an item in the January number of your journal, present vol., to which you might like to add a word of explanation. It is in answer to query 1,393, paragraph *d*. The volume to which the liquid should be diluted previous to distillation is omitted. Of the 100 C.c. distilled, "100 C.c. are filtered off, etc.," and finally, "the reagent consumed is increased by one-tenth, etc."

Yours truly,
HENRY BARTLETT.

CHICAGO, Sept. 10th, 1885.

The liquid should be diluted to exactly 110 C.c., and of this, 100 C.c. should be distilled off. This distillate is then to be titrated with volumetric solution of soda.—ED. AM. DRUGG.

Sea Foam.

Editor American Druggist.

DEAR SIR:—In the July number I noticed a correspondent desired a formula for Sea Foam. He does not state for what purpose he desired the *foam*, but I infer he wishes it for a shampoo. We dispense an article of that description to our local barbers, and they all know it by the title "Sea Foam." It is:

Tr. Arnica	1 drachm.
Tr. Cantharides	2 drachms.
Water Ammonia	3 "
Alcohol	½ pint.
Soft Water	½ "

This produces a copious lather or foam. Yours respectfully,
E. F. PHILLIPS.

Hoyt's German Cologne.

Editor American Druggist.

The formula for "Hoyt's German Cologne" is known to us as follows:

℞ Alcohol	5 galls.
Oil Bergamot	4 oz.
" Lemon	4 oz.
" Neroli	1 oz.
" Sandal Wood	2 oz.
Camphor	¼ oz.

M. Let it stand fourteen days.

M.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.

When asking for information respecting an unusual or proprietary compound, always accompany the query with all the information you may possess respecting it, and, when it can conveniently be done, send a specimen of the label.

No. 1,601.—**Analysis of Urine** (F. O. R.).

The most elaborate work on this subject is by *Neubauer and Vogel*, an English translation of which has been published by William Wood & Co. (see last number, page 70 of advertisements).

No. 1,602.—**Harlem or Haarlem Oil** (R.).

The composition of this is given in various ways.

Hager recommends to prepare it, when ordered, by combining with the aid of a gentle heat:

Oleum Lini Sulphuratum....	5 parts
Oleum Terebinthinæ.....	10 "
Oleum Cadinum.....	20 "

The first ingredient is prepared by boiling 16.6 parts of sublimed sulphur with 100 parts of linseed oil.

No. 1,603.—**Bichloride of Mercury and Urea** (E. A.).

This compound has recently been recommended (*Med.-Chir. Rundschau*) as a new antisyphilitic, to be administered hypodermically. It may be prepared by dissolving 2 parts of bichloride of mercury and 1 part of urea in 200 parts of distilled water, and filtering. This solution may then be used as it is, the dose being adjusted according to the necessity of the case: 5 minims being equal to about $\frac{1}{20}$ grain.

On evaporating the above-mentioned aqueous solution, no crystals of the compound can be obtained. This can be accomplished, however, by dissolving the two substances in alcohol, in the proportion of 270.5 parts of bichloride of mercury and 60 parts of urea, and evaporating. The resulting crystals, $HgCl_2.CH_4N_2O$, are but little soluble in cold water; decomposed by boiling water.

It will be seen that the solution first mentioned contains an excess of urea. This is probably done for the purpose of insuring the whole of the bichloride entering the double salt.

No. 1,604.—**Sediment in Solution of Sulphate of Copper** (F. O. R.).

This correspondent some time ago sent us a long series of queries, many of which do not admit of being answered in this Journal, as the answers would benefit perhaps only the inquirer, and it would be injustice to our other readers to take up space with matter not interesting to them. We make this remark here, intending it for the eyes of other correspondents who have in the past or may in the future put purely "personal" questions to us. We are, however, at all times willing to answer any query—if we can—that will be of use to more than one or only a few readers.

Now to the query: The writer reports that he has made test-solution of sulphate of copper from good commercial crystals and pure distilled water. After being filtered and set aside, the solution deposited a bluish cloud at the bottom. He wants to know what it is.

From the query we judge that the writer is, as yet, unable to make a qualitative analysis himself, which alone can determine the exact composition of the deposit. Experience, however, points to the probability that it is composed chiefly of zinc and iron sulphates (partly basic), which metals are almost always present in commercial blue vitriol. Chemically pure sulphate of copper as a reagent, may be obtained either by throwing down metallic copper from a concentrated solution of the sulphate by electrolysis (a platinum electrode being used), or by precipitating the metal as sulphide (see U. S. Ph., under Cupri Sulphas), dissolving the washed sulphide in pure nitric acid, diluting with water, precipitating *almost* completely with ammonia, dissolving the washed precipitate in dilute sulphuric acid and crystallizing. The U. S. Ph. (page 393) directs to use "selected" crystals of sulphate of copper and refers to Cupri Sulphas, meaning thereby that these crystals must stand the tests of the U. S. Ph.

No. 1,605.—**Filtering Shellac Varnish** (E. J. H.).

Shellac varnish made with alcohol may be filtered without difficulty, if it is previously well shaken up with a small quantity of some inert powder, such as plaster of Paris, chalk, phosphate of calcium. About two ounces per pint is sufficient.

The varnish may also be rendered clear by mixing it with one-fourth its volume of benzin or petroleum ether, shaking it frequently during one or two hours, and then setting it aside, when the clear alcoholic solution will collect at the bottom, and the benzin, containing some fatty or waxy substances in solution, will float on top. After removing this layer, the alcoholic solution may, if necessary, be freed from nearly all benzin odor by gently-warming. If the shellac is first extracted, in coarse powder, by warm benzin, it will afterwards furnish a clear solution in alcohol.

No. 1,606.—**Pine-Needle Extract** (U. G.).

Extract of pine-needles or pine leaves is said to be best made in the following manner. Put a suitable quantity of pine or fir leaves and young shoots into a still, with a sufficient quantity of water, and distil in the usual manner. Separate the volatile oil, which has passed over with the water into the receiver, pour the watery portion back into the retort, and continue this process for some time (some say "for two days"). Then transfer the residue in the retort to a sieve, collect all liquid running or dripping from the latter, evaporate it to the consistence of honey, and finally mix it with one per cent of its weight of the volatile oil. The resulting extract is a blackish-brown mass of an aromatic, fir-like odor, and an aromatic, astringent, and bitter taste.

The volatile oil (*Oleum Pini Sylvestris*), also called Fir-wool oil—officinal in the Brit. Pharm. of 1885—is colorless, or more rarely of a greenish or yellowish tint, mobile, of a balsamic odor, and has the spec. grav. 0.880 (according to Brit. Pharm., not below 0.870). It is distinguished from the similar oil of turpentine by not yielding a solid when treated with hydrochloric acid.

No. 1,607.—**Glossy Blacking for Leather** (M.).

We have seen the following recently recommended.

To 3 pounds of boiling water add 2 oz. of gum Senegal, 1 oz. of transparent glue (previously soaked in water), 1½ oz. of white castile soap, 2 oz. of brown sugar. When the solids are dissolved, add 8 oz. of white wax, and, after this is melted, 2½ oz. of alcohol. Stir well and allow to cool, occasionally agitating. When cold, intimately mix with it 3 oz. Frankfurt black.

The mass is applied in a thin layer by means of a soft brush, upon the leather, and finally polished with a stiff brush.

Frankfurt black is very finely divided carbon, prepared by carbonizing wine-yeast and skins of grapes.

BIBLIOGRAPHY.

PRACTICAL AND ANALYTICAL CHEMISTRY. Being a Complete Course in Chemical Analysis. By HENRY TRIMBLE, Ph.G., Professor of Analytical Chemistry in the Philadelphia College of Pharmacy. Illustrated. Philadelphia: P. Blakiston, Son & Co., 1885, 94 pp. 8vo. $1.50

THE contents are arranged under the headings PRACTICAL CHEMISTRY: I., Preparation and Properties of Gases; II., Preparation of Salts. QUALITATIVE ANALYSIS, *Bases* (embracing reactions of potassium, sodium, lithium, ammonium, barium, strontium, calcium, magnesium, manganese, zinc, cobalt, nickel, iron, cerium, chromium, aluminium, arsenic, antimony, tin, gold, platinum, mercury, bismuth, copper, cadmium, silver, and lead). *Acids, Detection of Bases and Acids, Reactions and Tests of Organic Compounds;* QUALITATIVE ANALYSIS, *Gravimetric Estimation* with examples in barium, chlorine, copper, sulphuric acid, potassium, nitric acid, calcium, and carbonic acid, and *Volumetric Estimation, i. e.*, oxalic acid, sodium hydrate, potassium bichromate, iodine, sodium hyposulphite, and silver nitrate.

To aid in laboratory work, the book contains numerous tables where in the main points are summarized.

A TEXT-BOOK OF PHARMACOLOGY, Therapeutics, and Materia Medica, by T. LAUDER BRUNTON, M.D., D.Sc., F.R.S., etc., adapted to the United States Pharmacopœia by Francis N. Williams, M.D., Boston, Mass. Philadelphia: Lea Brothers & Co., 1885, pp. 1,035, 8vo.

THE author is best known in the United States as the able editor of *The Practioner* and as a writer upon therapeutics. He says in the preface that the work was nearly ready for publication fifteen years since, but on going over it to give the manuscript a revision before sending it to the printer, he attempted some improvements, and the result has been that closer study, extended experience, and the delays incident to other engagements, have resulted in a new work.

Consistently with the progress of medical education and the development of a profession devoted to pharmacy exclusively, much of the matter relating to materia medica formerly taught to medical students has been omitted. The space has been more than filled by a description of the physiological action of drugs—something of far greater importance to those for whom the work is primarily intended.

The subject matter is arranged in six sections.

1. In the first section the topics are the general relations between the organism and substances affecting it; circumstances which affect the action of drugs on the organism; action of drugs on protoplasm, blood, low organisms, invertebrata, muscle, nerve, spinal cord, brain, organs of special sense, respiration, circulation, surface of the body, digestive system, drugs and tissue changes; action of drugs on excretion and on the generative system; methods of administering drugs; antidotes; antagonistic action of drugs and dosage.

2. The section on General Pharmacy

covers 28 pages and relates to 40 forms in which medicines are used.

3. Inorganic materia medica embraces hydrogen, oxygen, ozone, carbon, sulphur, and the halogens, acids, metals (*dyad metals, e. g.*, metals of the alkaline earths and earths—heavy metals); *pentad* metals, *e. g.*, nitrogen, phosphorus, arsenic, antimony, and bismuth; iron and manganese.

4. Organic materia medica, viz., carbon compounds under the head of fatty series and aromatic series.

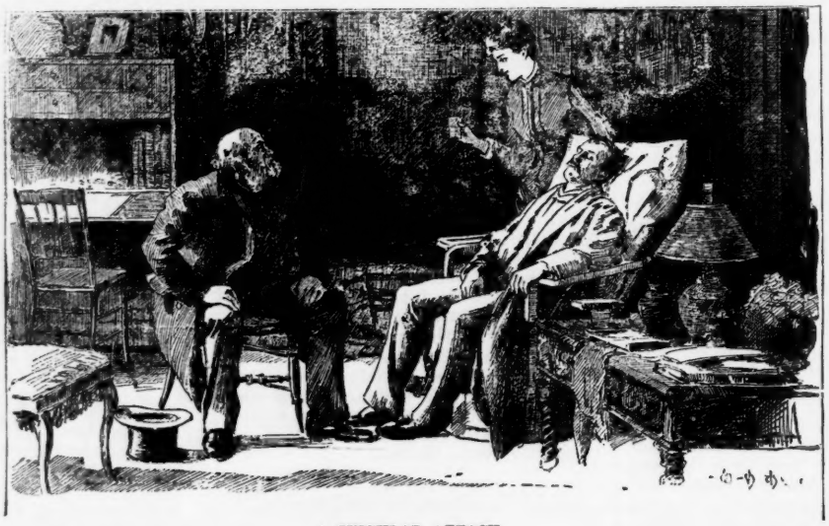
5. Vegetable materia medica, under which a botanical classification is adopted.

6. Animal kingdom. This also is arranged according to a scientific basis of classification.

A general index, index of diseases and remedies, and a bibliographical index complete this work. To show the completeness which characterizes the whole, we may say that the bibliographical section alone, in fine type, occupies 41 pages, and forms a most valuable guide to the student who desires to extend his knowledge beyond the information here conveyed.

A valuable feature is the comparison between the drugs and preparations of the U. S. and Br. Pharmacopœias in adjoining columns or paragraphs. Abundant use is made of illustrations, and the choice of type and arrangement of matter are very favorable for convenient reference.

Altogether the work is the most satisfactory textbook on the subject in the English language.



A SINGULAR ATTACK.

DOCTOR: "It is nothing but an attack of dyspepsia."
WIFE (Who evidently does not yet appreciate the connection between last evening's *business* engagement which kept him out until very late and this morning's illness: "And what does that come from, doctor?"
DOCTOR: "That comes from—from the Greek, Madam."—*Bazar.*

JAHRESBERICHT UEBER DIE FORTSCHRITTE der Pharmakotherapie. Ein Nachschlagebuch für Lehrer der med. Wissenschaften, Aerzte und Apotheker. Herausgegeben von DR. EDUARD RUD. KOBERT, Assist. am Pharmakolog. Inst. der Univer. Strassburg. Vol. I. (Report for 1884); 1 vol. in 2 parts. 8vo. Strassburg, 1885. *Price per year*, $4.40.

THIS annual report on the progress of *pharmaco-therapeutics* fills out a long-felt gap in medical literature, and will be found an indispensable work of reference for every progressive physician. It gathers from the current medical literature all new facts bearing upon the history, chemistry, or derivation, physiological effects, and therapeutic uses of drugs, giving brief abstracts of all important papers, and classifying the subjects under appropriate headings.

To show how the author treats his subject, we select the chapter which is headed: XV. *The Cocaine Group*, under which we find (*a*) the history of cocaine, containing, besides the previously known facts, quotations from and references to 6 recent papers; (*b*) the physiology and chemistry: abstract of 14 papers; (*c*) therapeutic effects: (1) in ophthalmology: abstracts and quotations of 70 papers: (2) in rhinology, otology, laryngology: 22 papers; (3) in uro-genital apparatus: 10 papers; (4) internally administered: 10 papers—the whole covering 26½ pages. This example will show the practical usefulness of the publication. The work is, by nature, a compilation, but its preparation involves an immense labor, as it necessitates a search through the whole medical literature of all countries. The author is well known as an authority on pharmacodynamics, and especially competent to edit a work of this kind.

ALPINE WINTER AND ITS MEDICAL ASPECTS: With Notes on Davos Platz, Wiesen, St. Moritz, and Maloja. By A. TUCKER WISE, M.D., L.R.C.P., M.R.C.S., etc. Second Edition. London: J. & A. Churchill, 1885, 121 pp., 8vo.

THE author gives a very comprehensive description of the Alpine climate and its adaptability to invalids, and likewise, in great detail, information relating to the places where the necessary accommodations may be obtained. Such matters as clothing, diet, exercise, meals, etc., are not overlooked, and a considerable space is devoted to a description of a sumptuous Hôtel Kursaal, recently erected at the Maloja, in which every possible precaution appears to have been taken to render the inmates as comfortable as modern science and art will permit. There are several illustrations and plans to aid the text. Altogether the book is a model of its kind, and should be read by all who contemplate an Alpine winter-cure.

THE AUSTRALASIAN JOURNAL OF PHARMACY. Published under the Direction of the Pharmaceutical Society of Australasia, Melbourne. June, 1885. Vol. I., No. 1, 22 pp., 8vo. 10/6 per annum.

THIS new magazine is issued gratis to members of the Society in Victoria, New South Wales, New Zealand, Queensland, South Australia, Tasmania, Western Australia, and Fiji. It is published on the 15th of each month, and its contents consist largely of association and trade matters. S. M. Pettengill & Co., 37 Park row, are the New York agents.

LECTURES ON THE PRINCIPLES OF HOUSE DRAINAGE. Delivered before the Suffolk District Medical Society and the Boston Society of Architects, by J. PICKERING PUTNAM, Architect. Boston: Ticknor & Co., 1885, 125 pp. sm. 8vo, cloth, 75 cts.

THIS book lays before the reader in an attractive, forcible, and simple manner the most important points connected with modern sanitary plumbing, that is, the proper disposal of waste matters. The work is divided into three parts, the first treating of Traps, their siphonage, evaporation, etc.; the second, of Lavatories, Waste Receptacles, and their waste attachments; and the third, of Soil and Drain Pipes, their jointing, arrangement, and ventilation. The whole is illustrated by seventy cuts.

Defective apparatus and methods are criticised, and the object of the writer is to describe in each case the best means of accomplishing the particular work in hand. As a result of his investigations and professional practice, some of the defects in the usual methods and apparatus employed in plumbing have been removed, and the improved apparatus which are known as the "Sanitas" appliances are fully described under their proper heads.

TREATMENT OF ZYMOTIC DISEASES by Syrups and Subcutaneous Injections of Declat's pure Nascent Phenic Acid, and Topical Treatment by Declat's Glyco-Phenique. Pp. 64. THE DECLAT MANUFACTURING Co., No. 86 Warren street, New York, Publishers.

A COPY of the above manual can be obtained by sending name and address on a postal card to the publishers.

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